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Search Report
EIC 1700

STIC Database Tracking Number: 239442

To:	From:
To: RIP LEE **Location: REM-10A21** **Art Unit: 1796** **Friday, October 05, 2007** **Case Serial Number: 10/518935**	**From: USHA SHRESTHA** **Location: EIC1700** **REM-4B28 / REM-4B31** **Phone: (571)272-3519** **usha.shrestha@uspto.gov**

Search Notes

Examiner LEE:

Please see the search results, feel free to contact me if you have any questions or if you like to refine the search query. Thank you for using STIC services!

Regards,
Usha

sira
Search and Information Resources Administration

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact:*

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* [ ] *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

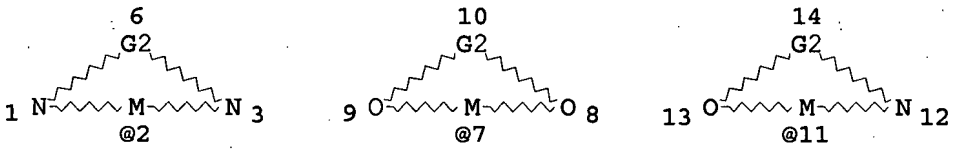
- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to EIC1700 REMSEN 4B28

=> d que l27
L1 SCR 2040 AND 1918
L2 SCR 2043 OR 2017 OR 2021 OR 2026
L3 STR



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NSPEC IS R AT 7
NSPEC IS R AT 11
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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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NUMBER OF NODES IS 13

STEREO ATTRIBUTES: NONE
L4 552687 SEA FILE=REGISTRY SSS FUL L3 AND L1 NOT L2
L5 STR

G1 1 @2 N + @3 C + @4 K + @5 Na +

VAR G1=2/3/4/5
NODE ATTRIBUTES:
CHARGE IS *+ AT 2
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CHARGE IS *+ AT 4
CHARGE IS *+ AT 5
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
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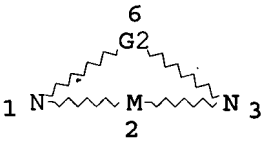
STEREO ATTRIBUTES: NONE
L7 STR



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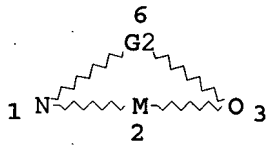

REP G2=(1-2) A
NODE ATTRIBUTES:
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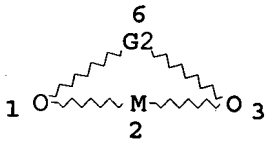
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L9 STR



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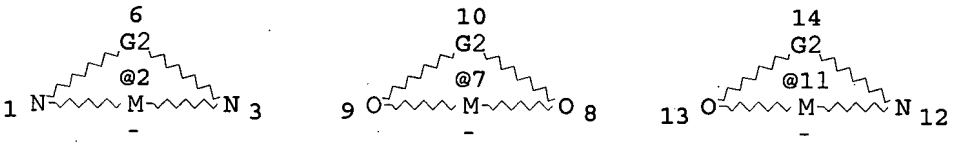
NODE ATTRIBUTES:
NSPEC IS R AT 2
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L12 STR



VAR G1=2/7/11
REP G2=(1-2) A
NODE ATTRIBUTES:
CHARGE IS *- AT 2
CHARGE IS *- AT 7
CHARGE IS *- AT 11
NSPEC IS R AT 2
NSPEC IS R AT 7
NSPEC IS R AT 11
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
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STEREO ATTRIBUTES: NONE
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L19         112 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L18
L20          95 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L19 AND (1840-2002)/PRY,AY
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L25           2 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND POLYMER?
L26          24 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L20 AND COORDINAT?
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                OR L25 OR L26)


=> d l27 1-36 ibib ed abs hitstr hitind

L27  ANSWER 1 OF 36  HCAPLUS  COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER:         2007:210311  HCAPLUS
DOCUMENT NUMBER:          146:470762
TITLE:                    Two new inorganic-organic hybrid single pendant
                          hexadecavanadate derivatives with bifunctional
                          electrocatalytic activities
AUTHOR(S):                Dong, Baoxia; Peng, Jun; Tian, Aixiang; Sha,
                          Jingquan; Li, Li; Liu, Hongsheng
CORPORATE SOURCE:         Key Laboratory of Polyoxometalate Science of
                          Ministry of Education, Faculty of Chemistry,
                          Northeast Normal University, Changchun, 130024,
                          Peop. Rep. China
SOURCE:                   Electrochimica Acta (2007), 52(11), 3804-3812
                          CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER:                Elsevier B.V.
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
ED   Entered STN:  27 Feb 2007
AB   Two new supramol. assembly hexadecavanadate derivs. of
     H2[Cd(phen)3]2{[Cd(H2O)(phen)2](V16O38Cl)}·2.5H2O (1) (phen =
     1,10'-phenanthroline) and H2[Cd(bipy)3][Cd(H2O)(bipy)2]{[Cd(H2O)(bipy)
     2](V16O38Cl)}·1.5H2O (2) (bipy = 2,2'-bipyridine), were prepared
     under mild hydrothermal conditions and structurally characterized by
     IR, XPS spectra, TG analyses and single-crystal x-ray diffraction.
     Compds. 1 and 2 are constructed from single pendant [CdL2] (L = phen,
     1 and L = bipy, 2) modified hexadecavanadates.  The hybrids 1 and 2
     were used as solid bulk modifier to fabricate bulk-modified C paste
     electrodes (CPEs) (1-CPE and 2-CPE) by direct mixing.  The
     electrochem. behaviors and electrocatalysis of 1-CPE and 2-CPE
     indicate bifunctional electrocatalytic activities toward both the
     oxidation and reduction of nitrite.  Also, their electrocatalytic activities
     toward the reduction of bromate and oxidation of ascorbic acid are also
     studied in 1 M H2SO4 aqueous solns.
IT   935272-52-9
        (cyclic voltammetry in sulfuric acid solution of carbon paste
        electrode modified with)
```

RN 935272-52-9 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, μ6-chlorotri-μ-oxooctadeca-μ3-oxopentadecaoxopentadecavanadate(6-), hydrate (6:1:7) (CA INDEX NAME)

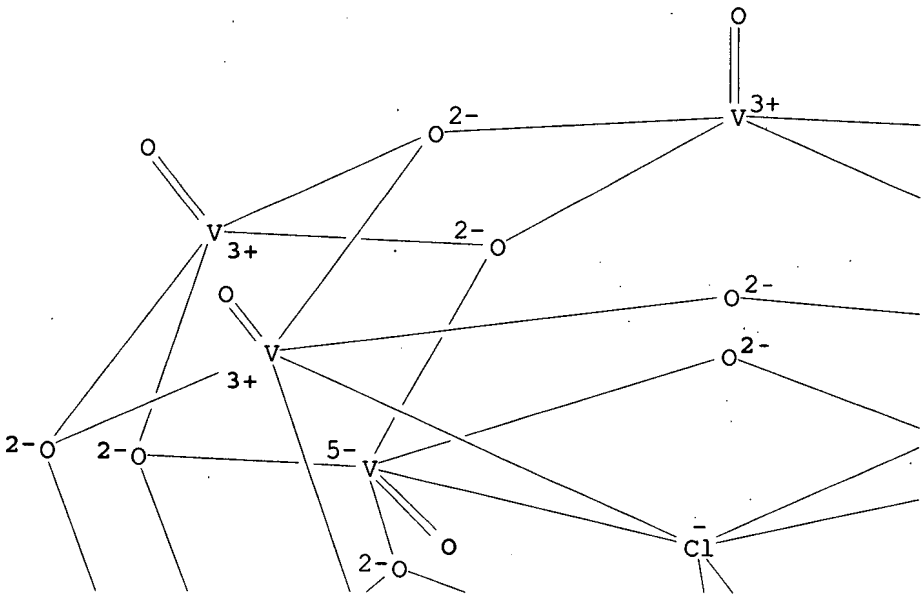
CM 1

CRN 110550-45-3
CMF C4 H12 N . 1/6 Cl O36 V15

CM 2

CRN 441286-66-4
CMF Cl O36 V15
CCI CCS

PAGE 1-A



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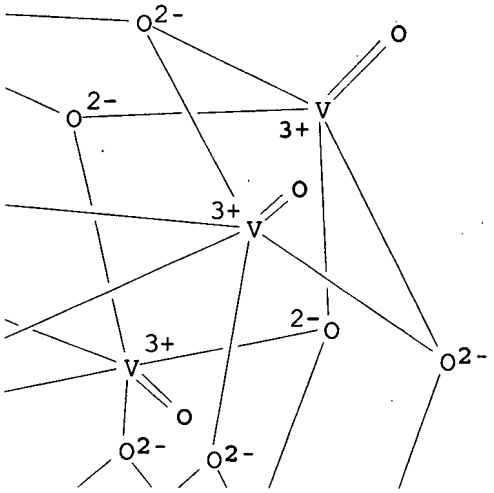

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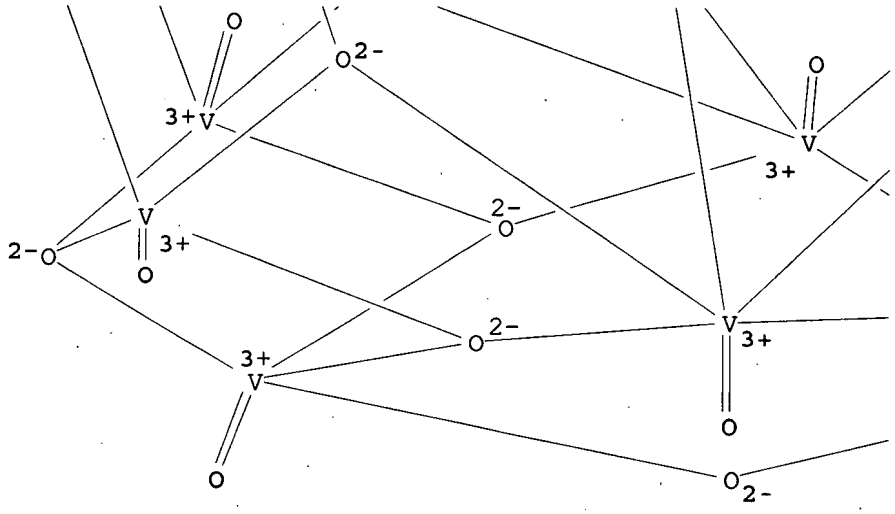

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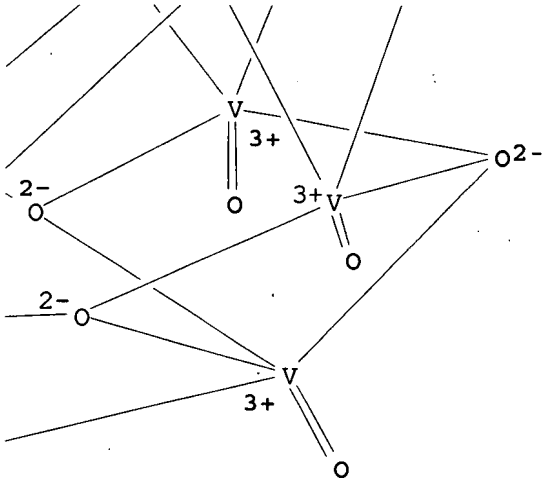
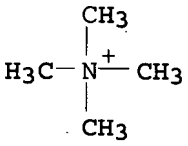


CM 3

CRN 51-92-3
CMF C4 H12 N



CC 72-2 (Electrochemistry)
Section cross-reference(s): 22, 67, 75, 78
IT **935272-52-9**
(cyclic voltammetry in sulfuric acid solution of carbon paste electrode modified with)
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 2 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:772539 HCAPLUS
DOCUMENT NUMBER: 136:256234
TITLE: A new family of microporous vanadium phosphates and related compounds with organic **coordination**
AUTHOR(S): Feng, Shouhua; Shi, Zhan; Zhang, Lirong; Zhao, Hui; Zhang, Dong; Dai, Zhimin
CORPORATE SOURCE: Key Laboratory of Inorganic Synthesis and Preparative Chemistry, Jilin University, Changchun, 130023, Peop. Rep. China
SOURCE: Studies in Surface Science and Catalysis (**2001**), 135(Zeolites and Mesoporous Materials at the Dawn of the 21st Century), 3432-3439
CODEN: SSCTDM; ISSN: 0167-2991

PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal; (computer optical disk)
LANGUAGE: English
OTHER SOURCE(S): CASREACT 136:256234
ED Entered STN: 25 Oct 2001
AB A new family of microporous vanadium phosphates and related compds. with organic **coordination** were hydrothermally crystallized and their crystal structures were characterized by single crystal x-ray diffraction. The hydrothermal preparation of [M(4,4'-bipy)2(VO2)2(HPO4)2] (M = Co, Ni) and V2PO8F·en are described and the crystal structures of these and other related compds. are presented and discussed. Structural diversity of these open inorg.-organic hybrid materials derives from considerable variables for both inorg. and organic parts from the point of view of syntheses and structures. Current study in this field shows great challenges not only in the crystal chemical of microporous materials but also in biol. properties such as helical arrays and ligand exchange.
IT **403498-46-4**
(crystal structure)
RN 403498-46-4 HCAPLUS
CN Vanadate(16-), [μ12-[hexakis[μ-[orthoborato(3-)-κO:κO']]hexa-μ-oxododecaoxododecaborato(30-)]]hexa-μ3-oxododecaoxododeca-, undecaoxonium disodium trihydrogen, tetrahydrate (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT 301662-96-4 301663-00-3 301663-05-8 **403498-46-4**
(crystal structure)
REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:168995 HCAPLUS
DOCUMENT NUMBER: 135:70026
TITLE: **Cation**-induced assembly of the first mixed molybdenum-vanadium hexadecametal host shell cluster anions
AUTHOR(S): Xu, Yan; Zhu, Dun-Ru; Guo, Zi-Jian; Shi, Yu-Jun; Zhang, Kou-Lin; You, Xiao-Zeng
CORPORATE SOURCE: Coordination Chemistry Institute, State Key Laboratory of Coordination Chemistry, Nanjing University, Nanjing, 210093, Peop. Rep. China
SOURCE: Journal of the Chemical Society, Dalton Transactions (**2001**), (6), 772-773
CODEN: JCSDAA; ISSN: 1472-7773
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:70026
ED Entered STN: 12 Mar 2001
AB Two novel hexadeca-metal oxygen cluster compds., {Ni[(NH2)2(C2H4)2NH]2}3[PMoVI5MoV3VIV8O44]·[(NH2)2(C2H4)2NH].cntdot.H2O (1) and {Co[(NH2)2(C2H4)2NH]2}2Na[PMoVI6MoV2VIV8O44]·8H2O (2) were synthesized by a hydrothermal method, and characterized by x-ray crystallog. The anion of 1 has a novel tetra-capping mode and the 1st hexadecametal-O host shell is observed in 2.
IT **345349-04-4P**

(preparation and crystal structure)
RN 345349-04-4 HCAPLUS
CN Cobalt(2+), bis[N-[2-(amino-κN)ethyl]-1,2-ethanediamine-κN,κN']-, sodium hexadeca-μ3-oxooctaoxo[μ12-[phosphato(3-)-κO:κO:κO:κO':κO':κO':κO'':κO'':κO'':κO'':κO''':κO''':κO''']]bis(tetra-μ-oxotetraoxotetramolybdate)octavanadate(5-) (2:1:1), octahydrate (9CI) (CA INDEX NAME)

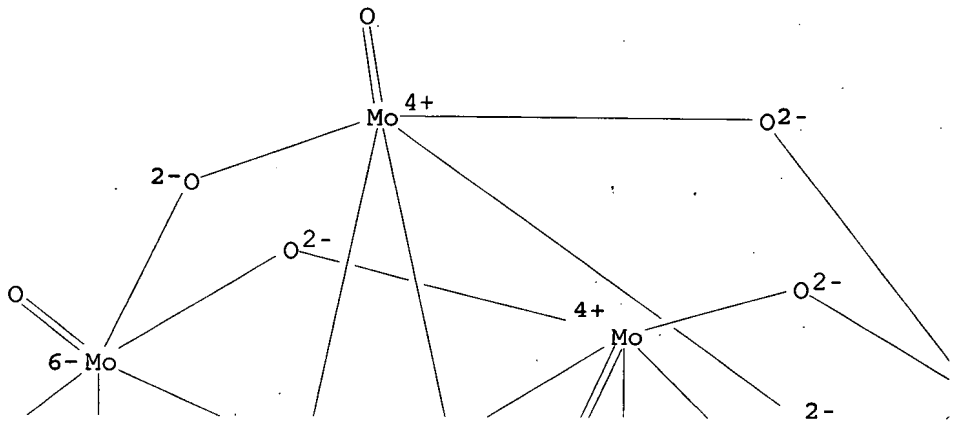
CM 1

CRN 345349-03-3
CMF C8 H26 Co N6 . 1/2 Mo8 O44 P V8 . 1/2 Na

CM 2

CRN 227002-62-2
CMF Mo8 O44 P V8
CCI CCS

PAGE 1-B



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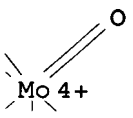

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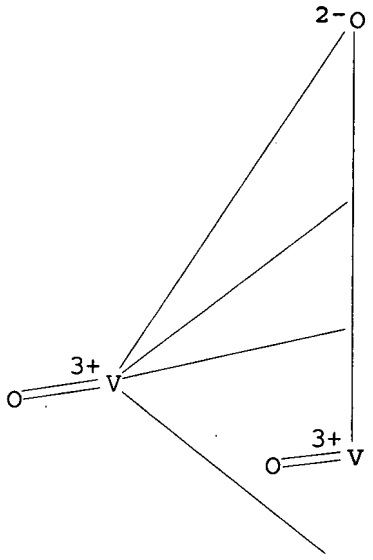

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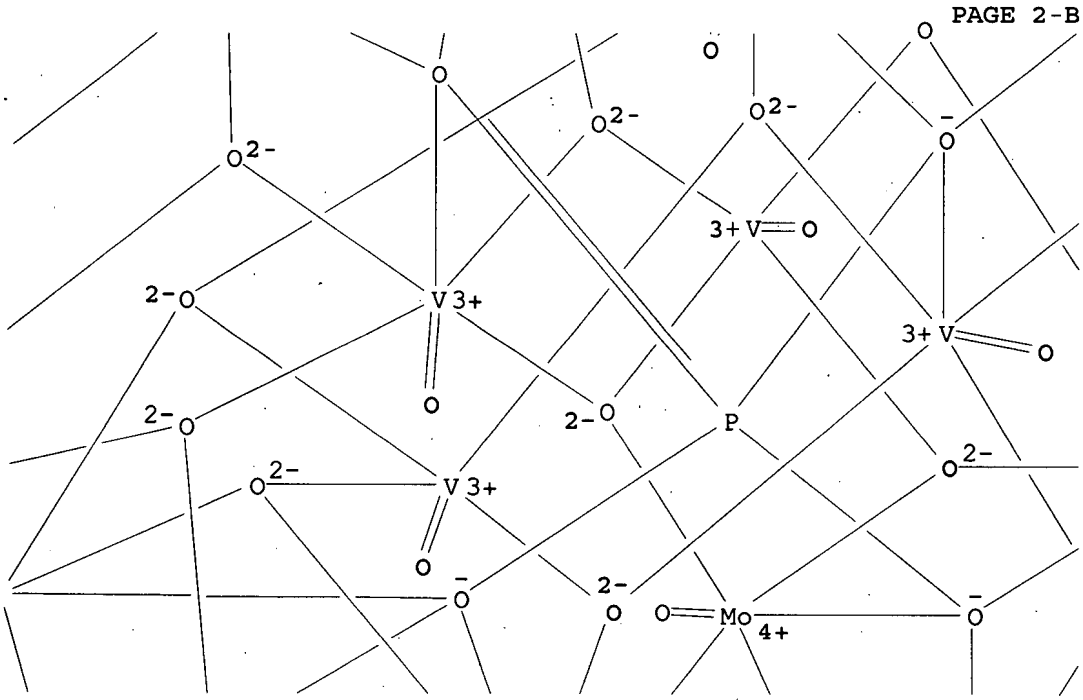

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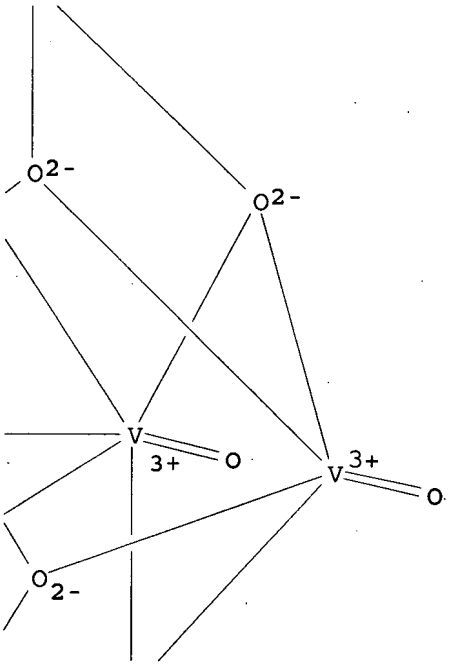

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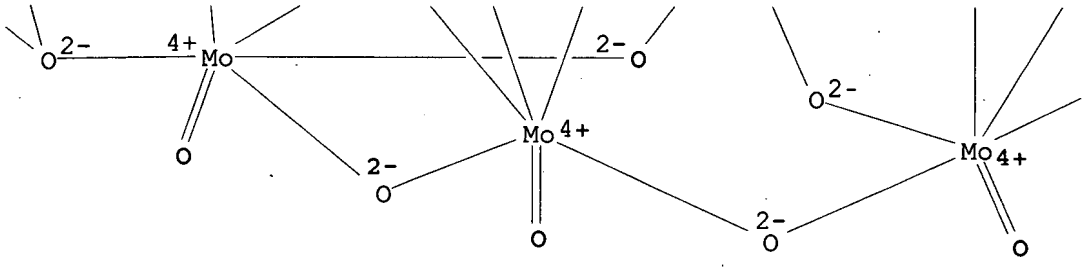
PAGE 3-B



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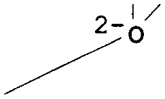
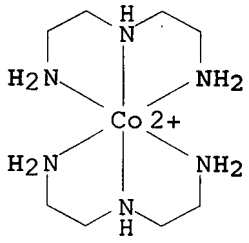


CM 3

CRN 23624-01-3
CMF C8 H26 Co N6
CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT 345349-01-1P **345349-04-4P**
(preparation and crystal structure)
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2001:98126 HCAPLUS
DOCUMENT NUMBER: 134:304589
TITLE: Electrosynthesis and solution structure of six-electron reduced forms of metatungstate,

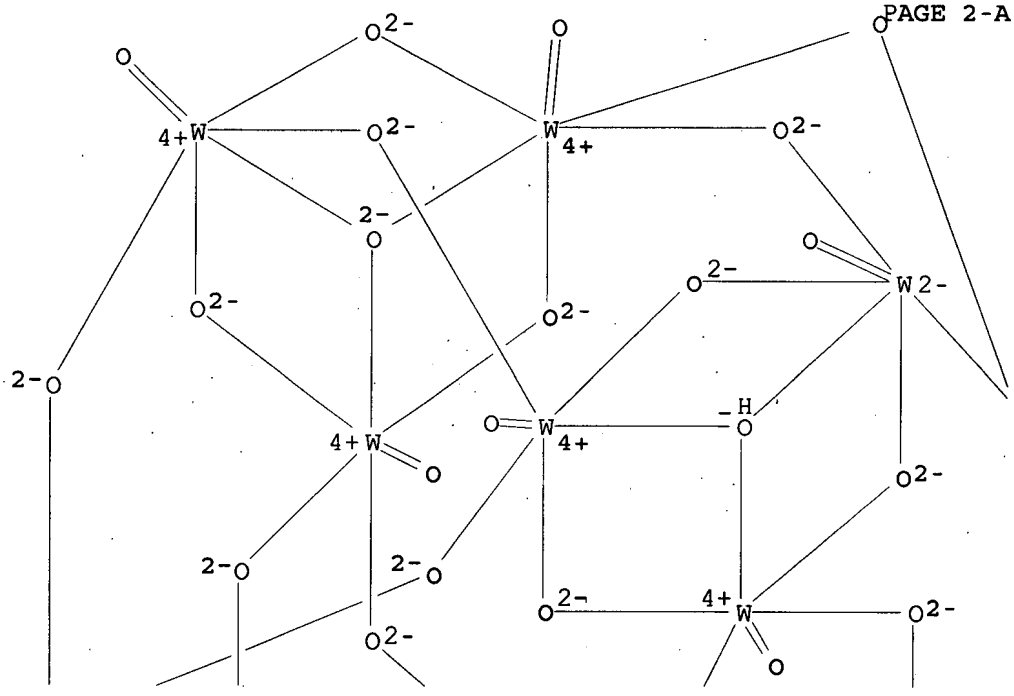
[H2W12O40]6-

AUTHOR(S): Boskovic, Colette; Sadek, Maruse; Brownlee, Robert T. C.; Bond, Alan M.; Wedd, Anthony G.
CORPORATE SOURCE: School of Chemistry, University of Melbourne, Parkville, 3052, Australia
SOURCE: Journal of the Chemical Society, Dalton Transactions (**2001**), (2), 187-196
CODEN: JCSDAA; ISSN: 1472-7773
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 09 Feb 2001
AB Metatungstate salts α-[R4N]5H[H2W12O40] (R = Pr or Bu) were produced by phase transfer methods. Two 1-electron reduction processes (E1/2 -1100, -1590 mV vs. Ag-AgCl (saturated KCl in MeCN)) are seen for [Bu4N]5H[H2W12O40] in MeCN (Bu4NClO4, 0.1M) solution They convert into a single two-electron process in MeCN-H2O (95:5 volume/volume) upon the addition of acid. Controlled potential electrolysis in aqueous HCl at the two potentials gave the six-electron reduced salt [NH4]4H8[H2W12O40] in which one of the oxidized WVI3 trinuclear caps of metatungstate is reduced to a WIV3 trinuclear cap. [Bu4N]3H9[H2W12O40] and related salts were generated by phase transfer. [H2{WIV3(OH2)3}WVI9O34(OH)3]3- was obtained by dissolving [Bu4N]3H9[H2W12O40] in dry CD3CN. The distribution of the eleven protons present in this anion is mapped by 1H and 183W NMR, allowing assessment of the structural changes which accompany reduction Cs point symmetry is observed and imposed by the association of the three surface hydroxyl protons with the reduced WIV3 trinuclear cap and one of the oxidized WVI3 trinuclear caps. Three WOW links appear to be converted into longer W(OH)W links to accommodate the significant shortening (≈0.7 Å) in W...W separation anticipated to occur upon reduction
IT **334764-48-6DP**, solid solution with tetraprotonated analog
334764-58-8DP, solid solution with tetraammonium analog
(preparation and **cation** exchange with tetrabutylammonium salt)
RN 334764-48-6 HCAPLUS
CN Tungstate (W(OH)2O3812-), tetraammonium octahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A

2-

PAGE 2-A



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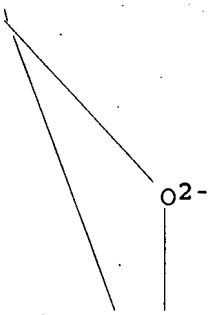

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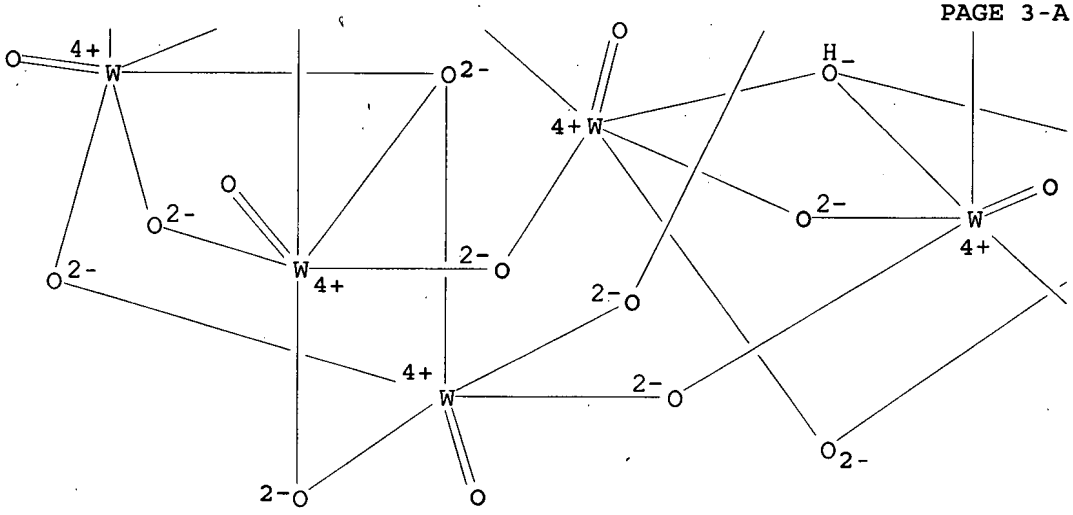
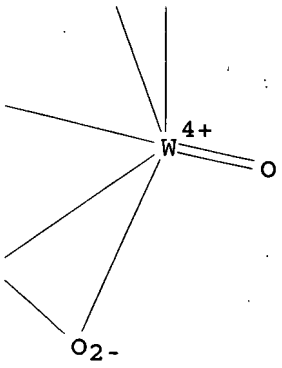


● 8 H^+

PAGE 3-B



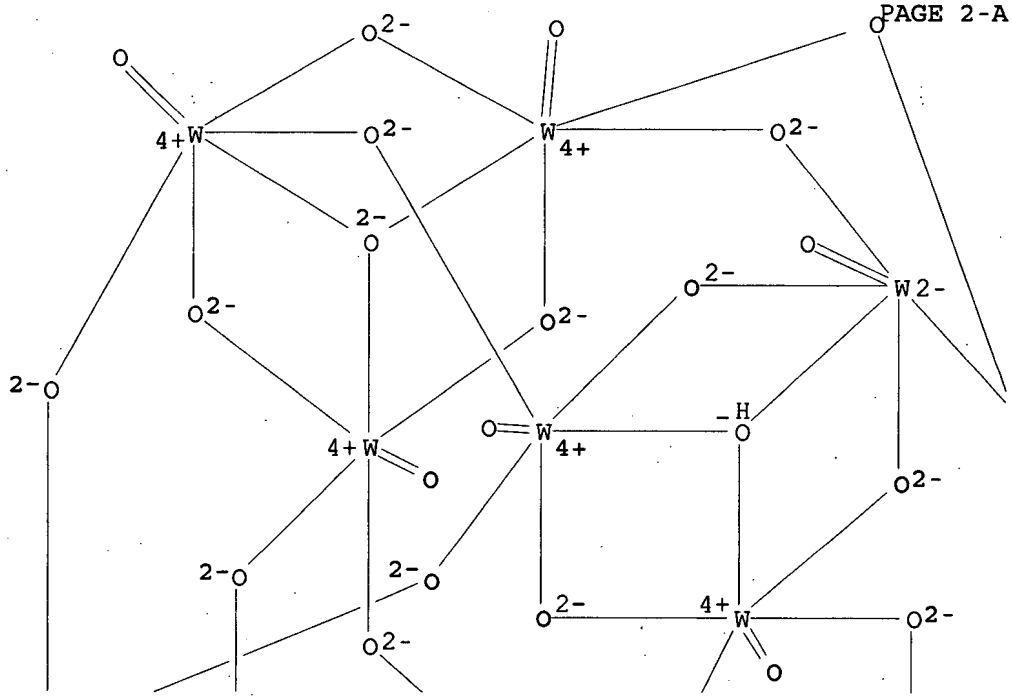
● 4 NH_4^+

RN 334764-58-8 HCAPLUS
CN Tungstate (W12(OH)203812-), tetrasodium octahydrogen (9CI) (CA INDEX NAME)

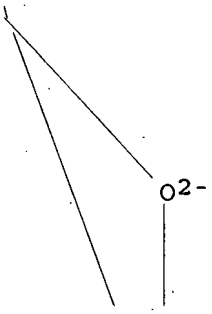
PAGE 1-A

2-

PAGE 2-A



PAGE 2-B



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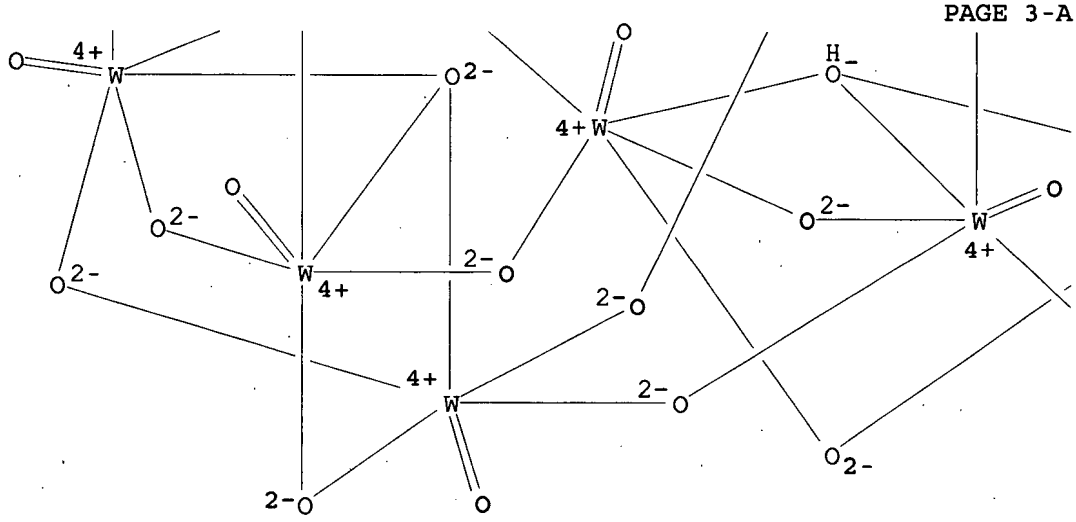
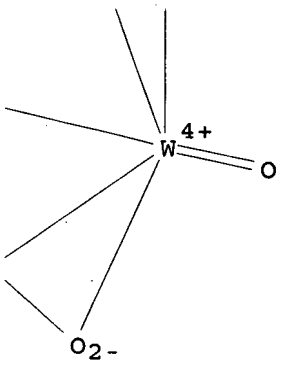


●8 H^+

PAGE 3-B



●4 Na^+

IT **334764-51-1P 334764-54-4P 334764-56-6DP,**
solid solution with dodecaprotonated analog **334764-60-2DP,**
solid solution with tetrasodium analog
(preparation of)
RN 334764-51-1 HCAPLUS
CN 1-Propanaminium, N,N,N-tripropyl-, hydrogen di-μ3-hydroxytetracosa-μ-oxodi-μ3-oxododecaoxododecatungstate(12-) (3:9:1) (9CI) (CA INDEX NAME)

CM 1

CRN 334764-50-0
CMF H2 O40 W12
CCI CCS

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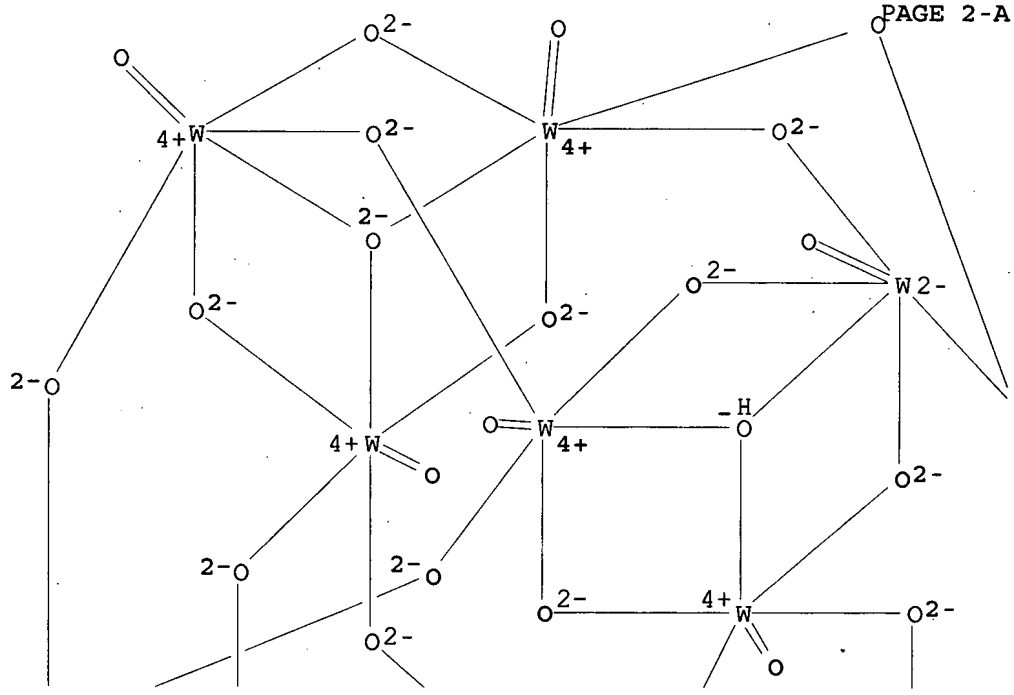
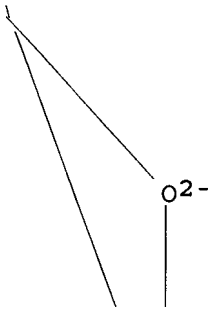
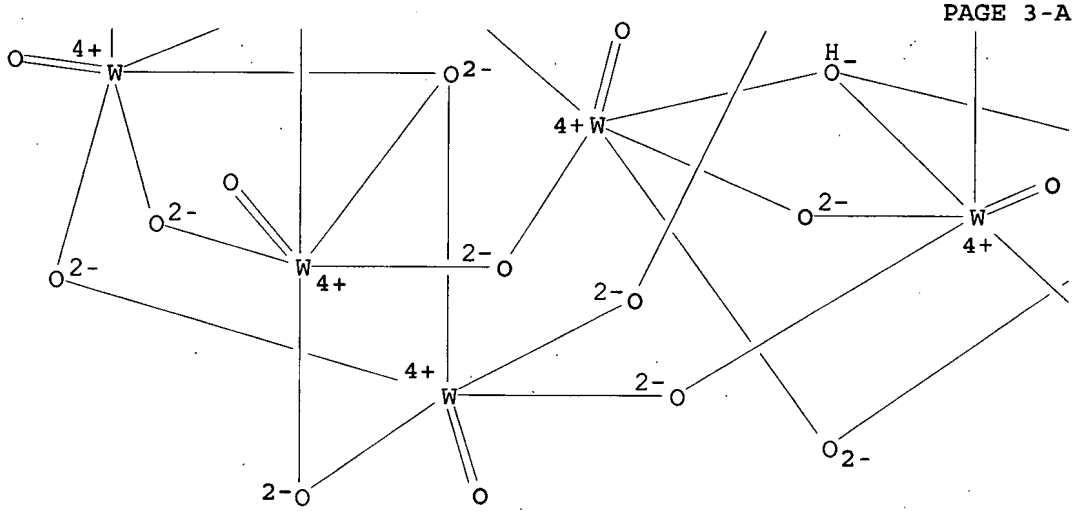


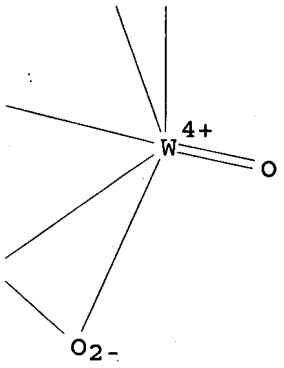
PAGE 2-B



PAGE 3-A

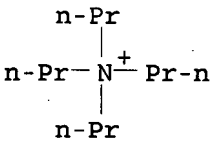


PAGE 3-B



CM 2

CRN 13010-31-6
CMF C12 H28 N



RN 334764-54-4 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, tetraphenylarsonium hydrogen di-μ3-hydroxytetracosa-μ-oxodi-μ3-oxododecaoxododecatungstate(12-) (5:1:18:2) (9CI) (CA INDEX NAME)

CM 1

CRN 334764-50-0
CMF H2 O40 W12
CCI CCS

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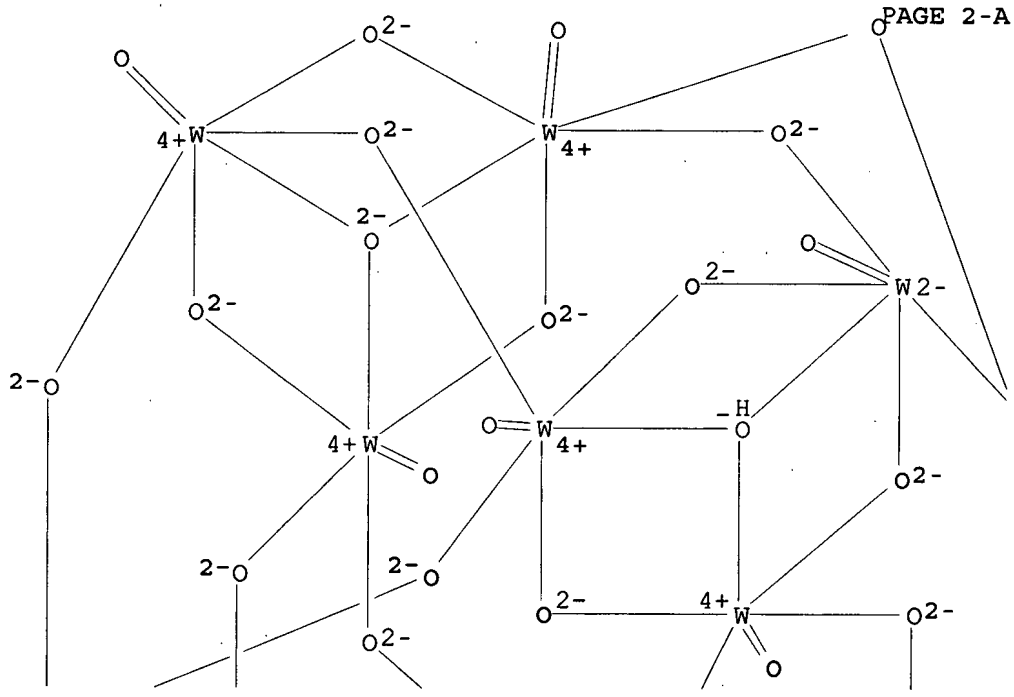

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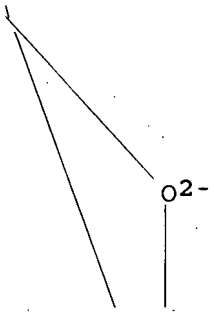
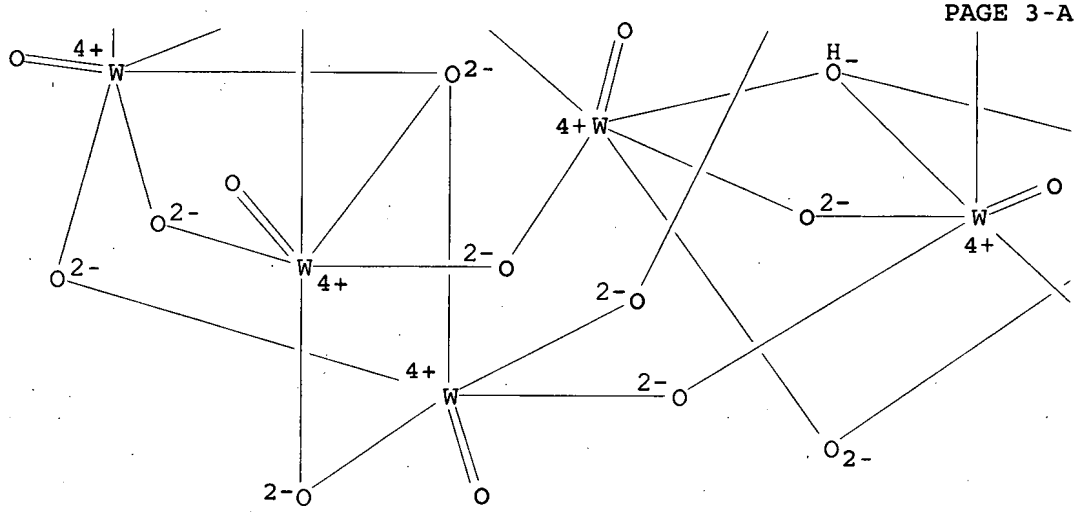
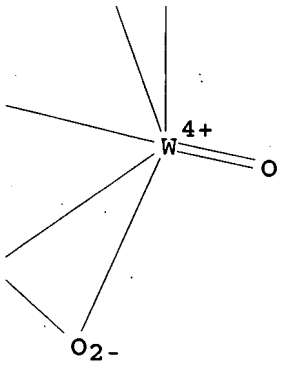


PAGE 3-A

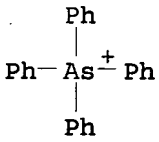


PAGE 3-B



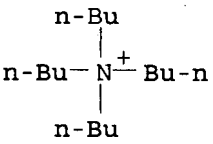
CM 2

CRN 15912-80-8
CMF C24 H20 As



CM 3

CRN 10549-76-5
CMF C16 H36 N



RN 334764-56-6 HCAPLUS
CN 1-Hexanaminium, N,N,N-trihexyl-, di-μ3-hydroxytetracosa-μ-oxodi-μ3-oxododecaoxododecatungstate(12-) (12:1) (9CI) (CA INDEX NAME)

CM 1

CRN 334764-50-0
CMF H2 O40 W12
CCI CCS

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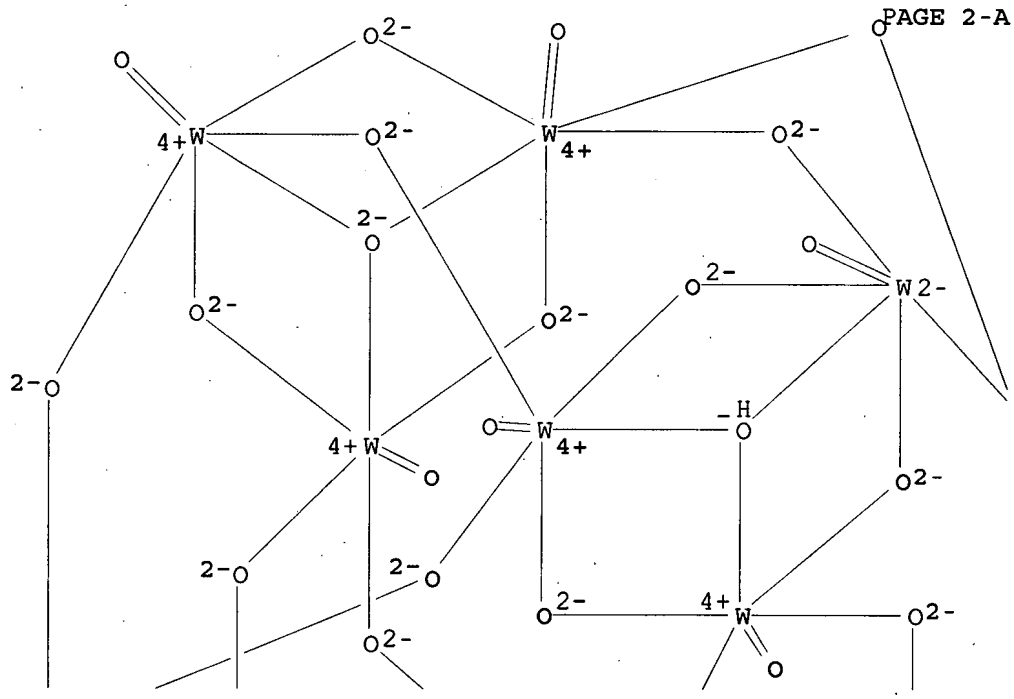
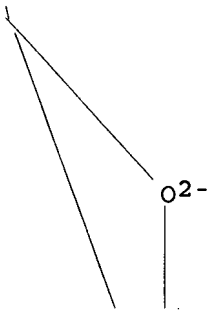
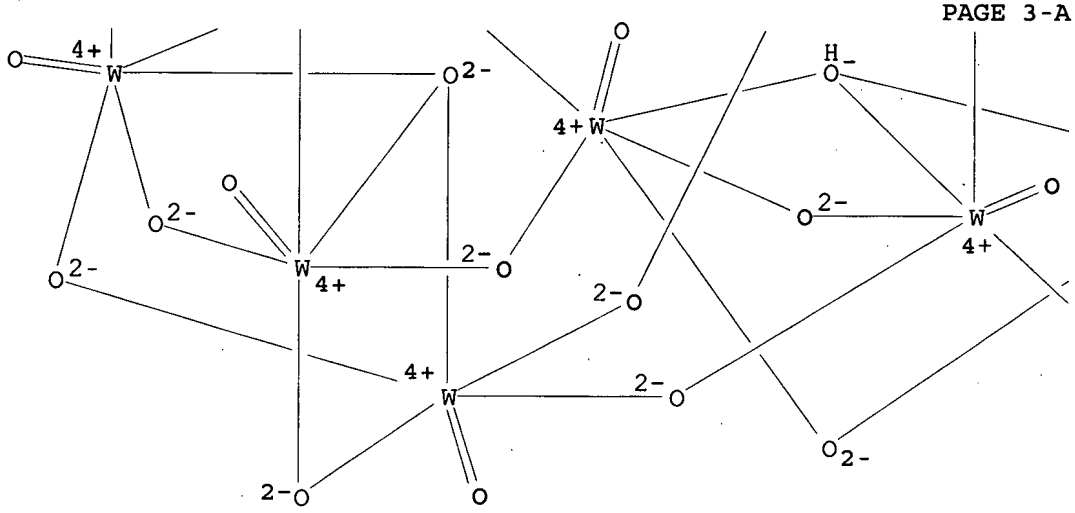


PAGE 2-B



PAGE 3-A



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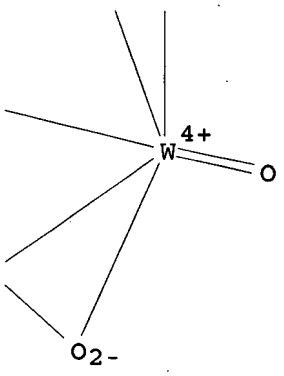
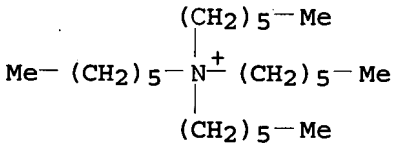


CM 2

CRN 20256-54-6
CMF C24 H52 N



RN 334764-60-2 HCAPLUS
CN 1-Propanaminium, N,N,N-tripropyl-, hydrogen di-μ3-hydroxytetracosa-μ-oxodi-μ3-oxododecaoxododecatungstate(12-) (4:8:1) (9CI) (CA INDEX NAME)

CM 1

CRN 334764-50-0
CMF H2 O40 W12
CCI CCS

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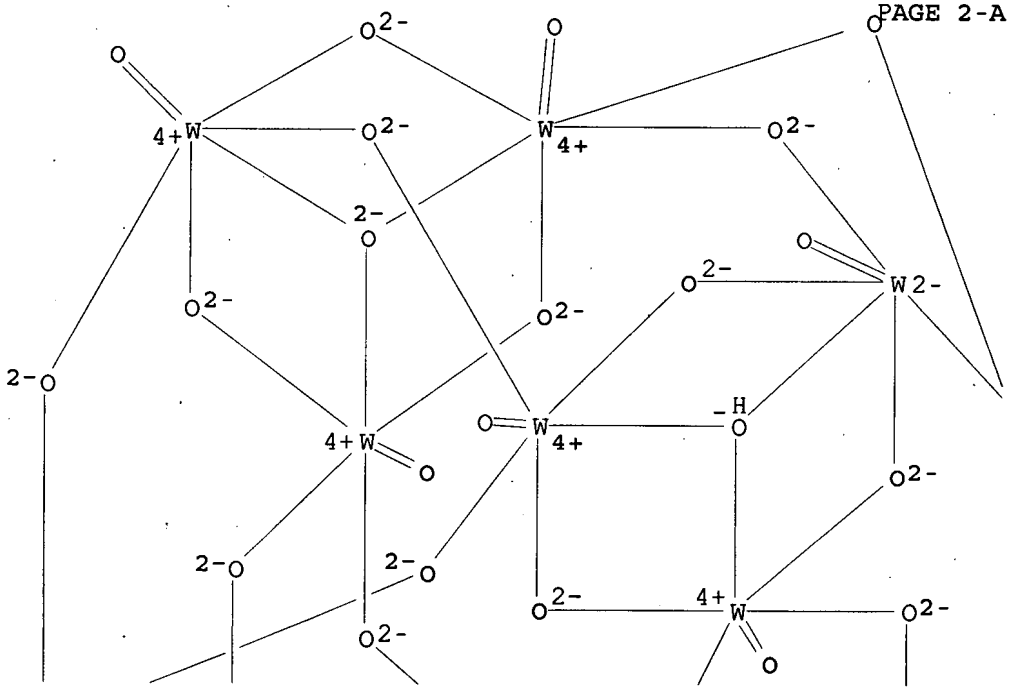

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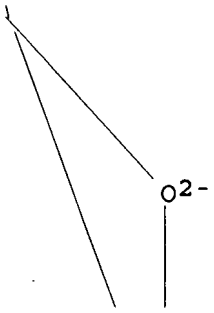
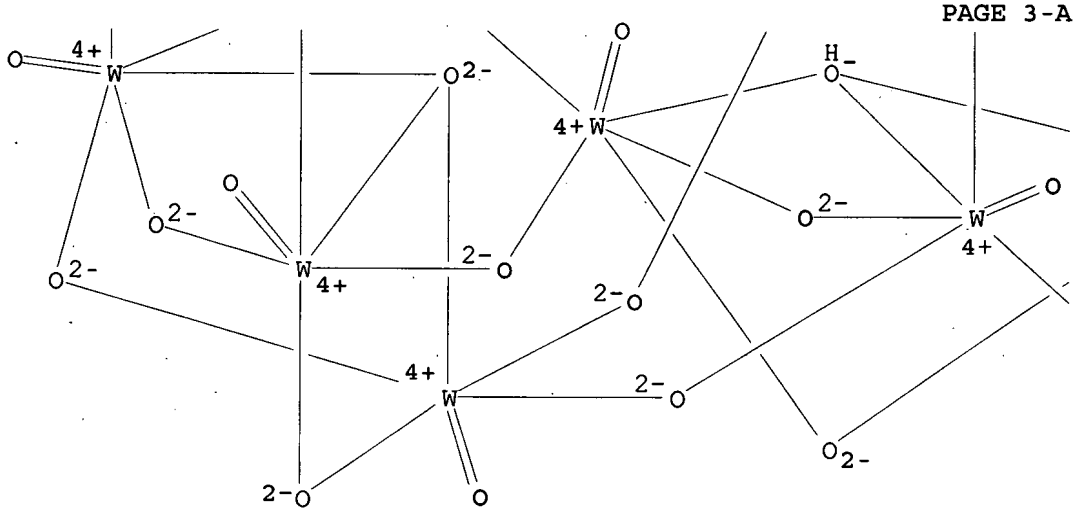


PAGE 3-A



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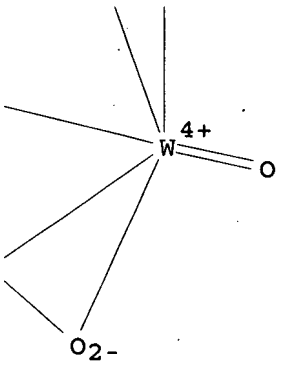
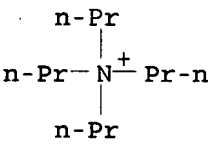


CM 2

CRN 13010-31-6
CMF C12 H28 N



IT **334764-48-6P**
(preparation, electrochem. redox, proton and tungsten-183 NMR, and conversion to tetraalkylammonium salt by phase transfer method)
RN 334764-48-6 HCAPLUS
CN Tungstate (W(OH)2O3812-), tetraammonium octahydrogen (9CI) (CA INDEX NAME)

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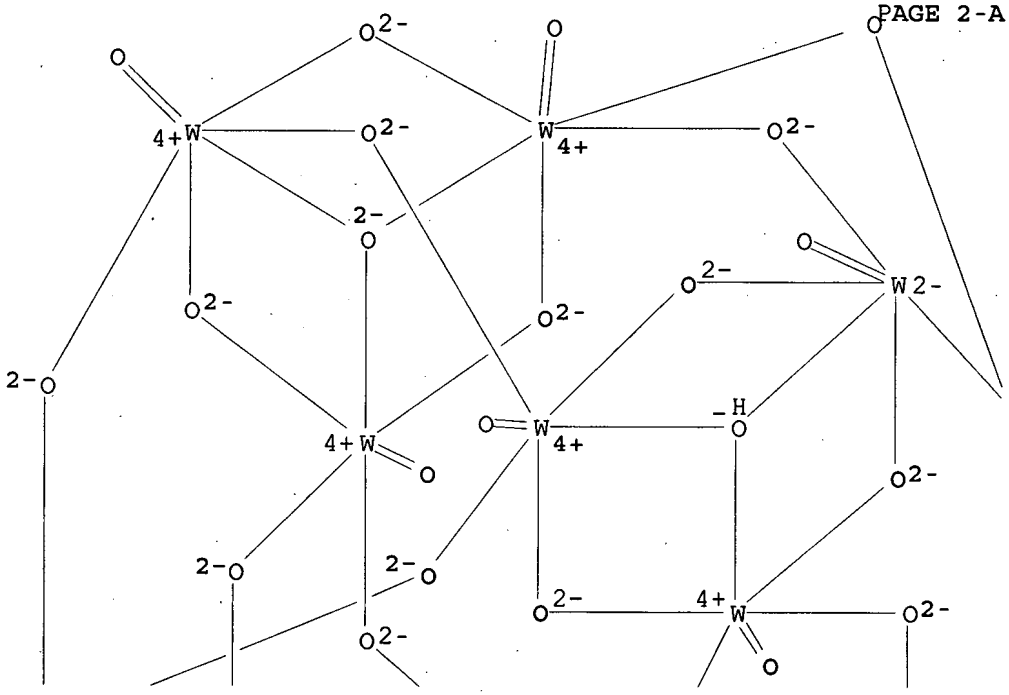

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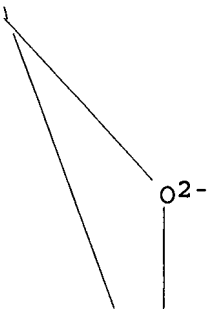

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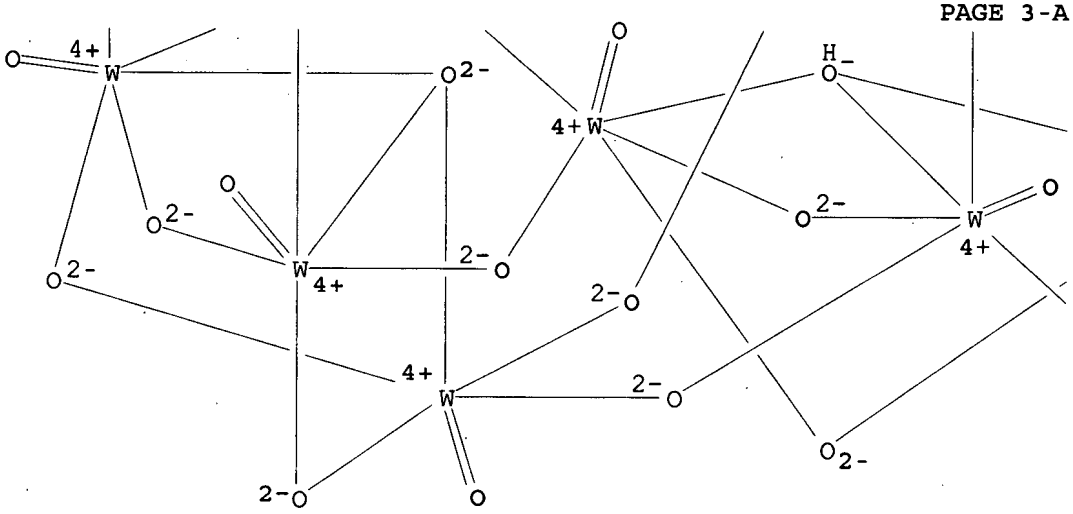

● 8 H^+

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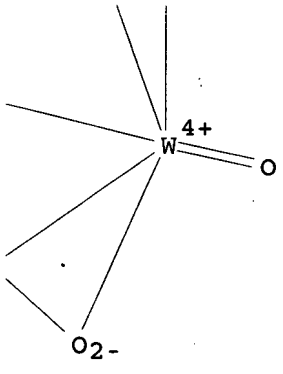


●4 NH_4^+

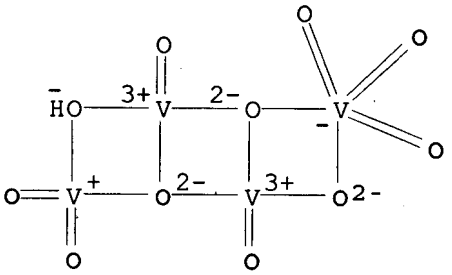
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 72, 77
IT **334764-48-6DP**, solid solution with tetraprotonated analog
334764-58-8DP, solid solution with tetraammonium analog
(preparation and **cation** exchange with tetrabutylammonium salt)
IT 166671-98-3P **334764-51-1P 334764-54-4P**
334764-56-6DP, solid solution with dodecaprotonated analog
334764-60-2DP, solid solution with tetrasodium analog
334764-61-3DP, solid solution with tetra(hexyl)ammonium analog
(preparation of)
IT **334764-48-6P**
(preparation, electrochem. redox, proton and tungsten-183 NMR, and conversion to tetraalkylammonium salt by phase transfer method)
IT 223512-69-4P
(preparation, proton and tungsten-183 NMR, and **cation** exchange with tetraalkylammonium and tetraphenylarsonium salts)
REFERENCE COUNT: 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 5 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:531087 HCAPLUS
DOCUMENT NUMBER: 133:304920
TITLE: Unknown isopolyoxovanadate species detected by electrospray mass spectrometry
AUTHOR(S): Walanda, D. K.; Burns, R. C.; Lawrance, G. A.; von Nagy-Felsobuki, E. I.
CORPORATE SOURCE: School of Biological and Chemical Sciences, The University of Newcastle, Callaghan, 2308, Australia
SOURCE: Inorganica Chimica Acta (**2000**), 305(2), 118-126
CODEN: ICHAA3; ISSN: 0020-1693
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 03 Aug 2000
AB Electrospray mass spectrometry (ES MS) was used to identify many previously unknown isopolyvanadate anions and **cations** in aqueous solns. under nonequil. conditions. There is direct evidence that the evaporation process in ES MS resulted in significant chemical effects, thereby generating many of these previously undetected species. As a consequence, ES MS offers insight into the **polymerization** process.

For the ammonium metavanadate system, neg.-ion ES MS yielded two series, namely: [HxVyOz]- (x = 0 to 1; y = 1 to 10; z = 3 to 26) and [HxVyOz]2- (x = 0, 1; y = 3 to 17; z = 9 to 44). Also, the [H2VO4]-, [V10O28]6- and [H5V10O28]- anions were detected. In the pos.-ion mode, three series of polyoxovanadate **cations** were observed, namely: [Hm+1(VO3)m]+, [Hm-1VmO3m-1]+ and [Hm-3VmO3m-2]+. For the alkali metal metavanadate systems ions [AVmO3m-2]- (m = 2, 4, 6; A=Li+, Na+ and K+) were detected. In the pos.-ion mode, at least two series [Am+1(VO3)m]+ and [Am+3VmO3m+1]+ were observed In all series, the protonated and unprotonated ions differed by {V2O5} mass units (characterized by ES MS as the formal building block in these clusters). At high cone-voltages, mixed-valence polyoxovanadate anions were observed for all the systems studied. However, for the pos.-ion mode, the only mixed-valence polyoxovandates **cations** detected were for the K system.

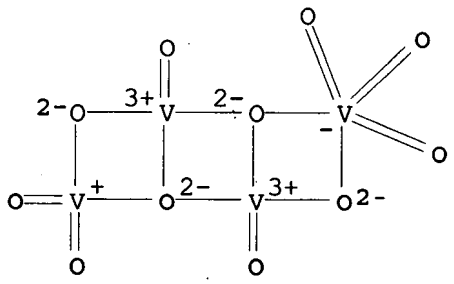
IT **300685-29-4 300685-45-4 300711-86-8**
300711-87-9 300713-97-7 300713-98-8
300714-13-0 300714-14-1 300714-97-0
300714-98-1 300714-99-2 300715-00-8
300715-01-9 300715-02-0 300715-03-1
300715-06-4 300715-11-1 300715-13-3
300715-23-5 300715-27-9 300715-29-1
300715-30-4 300715-31-5 300715-32-6
300715-33-7 300715-34-8 300715-37-1
300715-38-2 300715-40-6 300765-39-3
300765-40-6 300765-41-7 300765-42-8
300765-43-9 300765-44-0 300765-45-1
300765-46-2 300765-47-3 300765-48-4
300765-49-5
(unknown isopolyoxovanadate species detected by electrospray mass spectrometry)

RN 300685-29-4 HCAPLUS
CN Vanadate (V4(OH)O10 1-), ammonium, stereoisomer (9CI) (CA INDEX NAME)



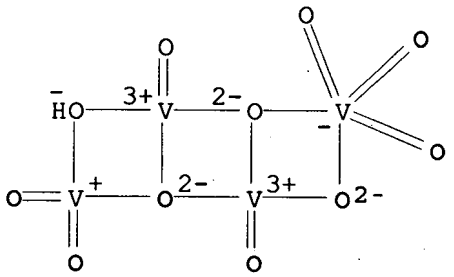
● NH_4^+

RN 300685-45-4 HCAPLUS
CN Vanadate (V4O11 2-), diammonium, stereoisomer (9CI) (CA INDEX NAME)



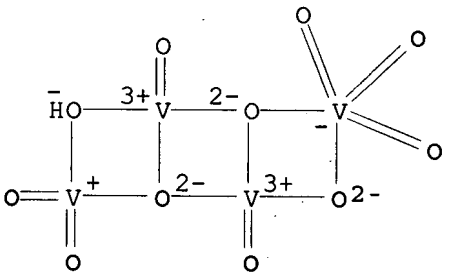
● 2 NH_4^+

RN 300711-86-8 HCAPLUS
CN Vanadate (V4(OH)O101-), sodium, stereoisomer (9CI) (CA INDEX NAME)



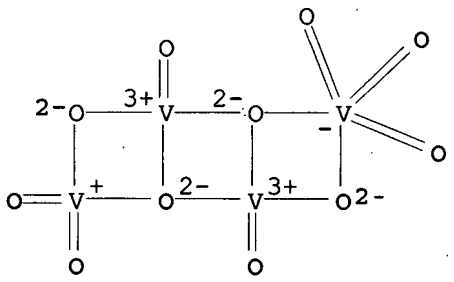
● Na^+

RN 300711-87-9 HCAPLUS
CN Vanadate (V4(OH)O101-), potassium, stereoisomer (9CI) (CA INDEX NAME)



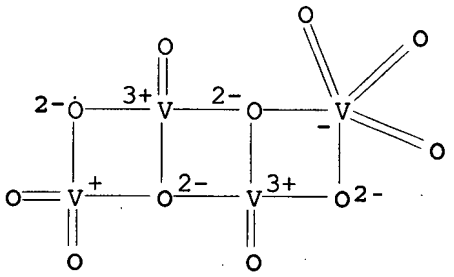
● K^+

RN 300713-97-7 HCAPLUS
CN Vanadate (V4O112-), disodium, stereoisomer (9CI) (CA INDEX NAME)



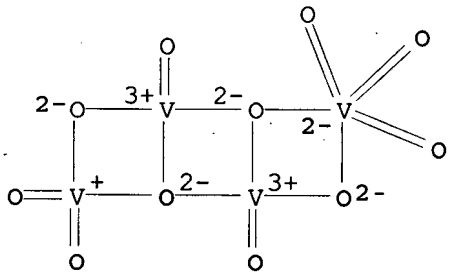
●2 Na^+

RN 300713-98-8 HCAPLUS
CN Vanadate (V4O112-), dipotassium, stereoisomer (9CI) (CA INDEX NAME)



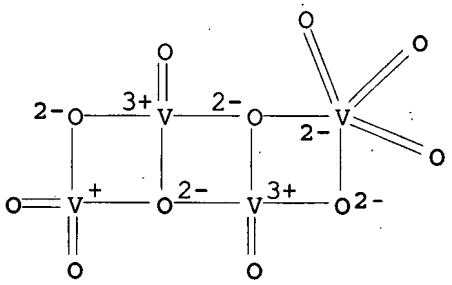
●2 K^+

RN 300714-13-0 HCAPLUS
CN Vanadate (V4O113-), trisodium, stereoisomer (9CI) (CA INDEX NAME)



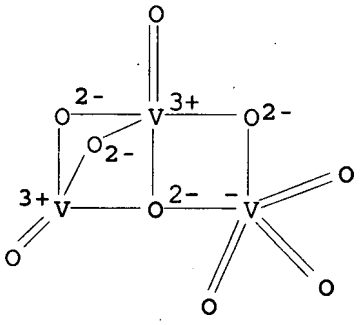
●3 Na^+

RN 300714-14-1 HCAPLUS
CN Vanadate (V4O113-), tripotassium, stereoisomer (9CI) (CA INDEX NAME)



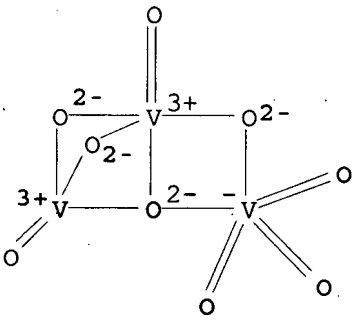
●3 K+

RN 300714-97-0 HCAPLUS
CN Vanadate (V3O93-), tetrasodium, stereoisomer (9CI) (CA INDEX NAME)



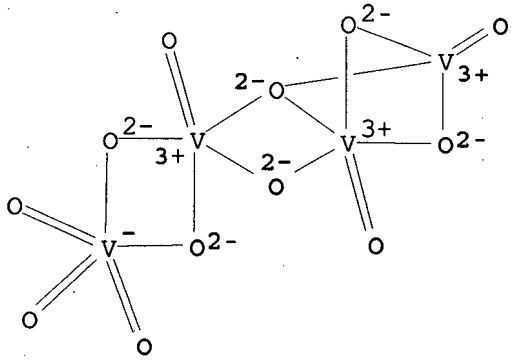
●4 Na+

RN 300714-98-1 HCAPLUS
CN Vanadate (V3O93-), tetrapotassium, stereoisomer (9CI) (CA INDEX NAME)



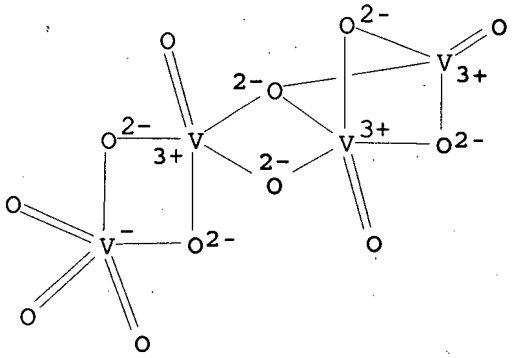
●4 K+

RN 300714-99-2 HCAPLUS
CN Vanadate (V4O124-), pentasodium, stereoisomer (9CI) (CA INDEX NAME)



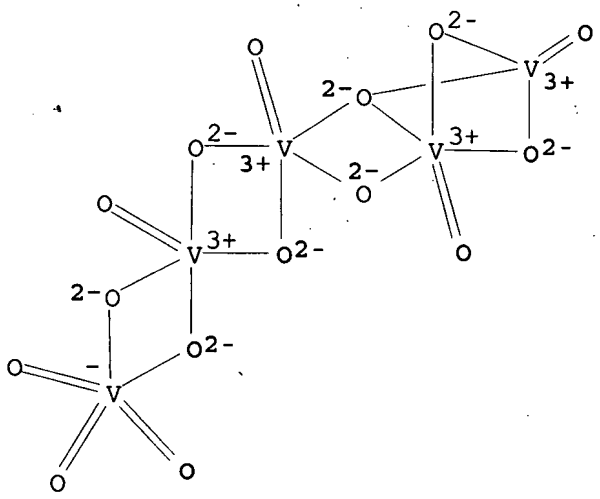
●5 Na^+

RN 300715-00-8 HCAPLUS
CN Vanadate (V4O124-), pentapotassium, stereoisomer (9CI) (CA INDEX NAME)



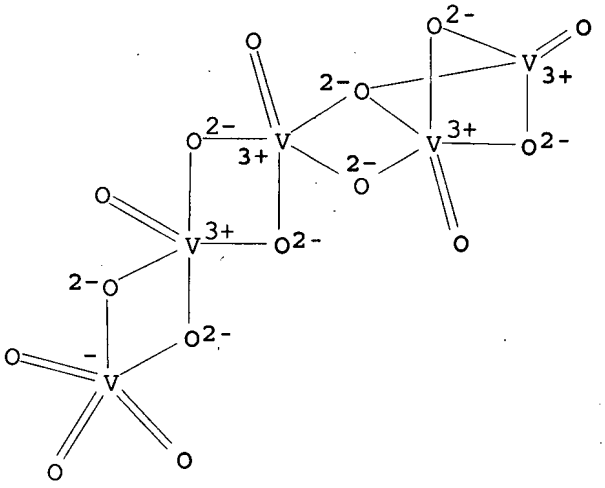
●5 K^+

RN 300715-01-9 HCAPLUS
CN Vanadate (V5O155-), hexasodium, stereoisomer (9CI) (CA INDEX NAME)



●6 Na^+

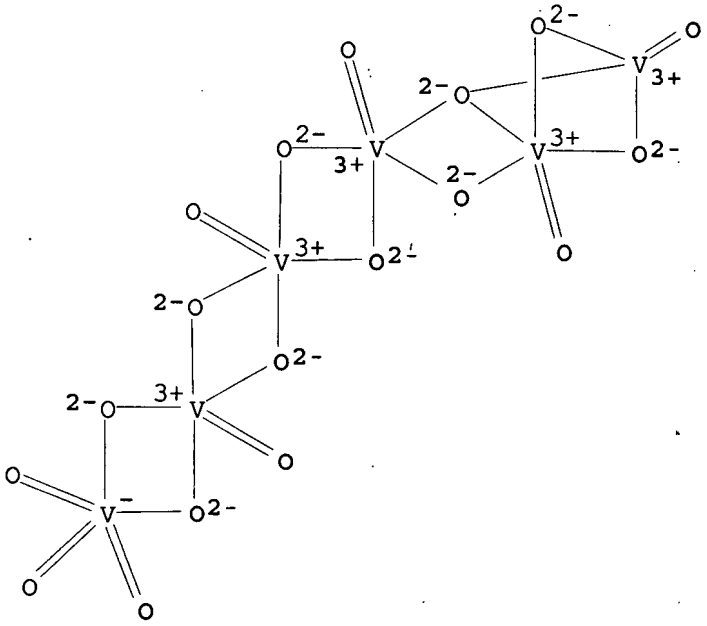
RN 300715-02-0 HCAPLUS
CN Vanadate (V5O155-), hexapotassium, stereoisomer (9CI) (CA INDEX NAME)



●6 K^+

RN 300715-03-1 HCAPLUS
CN Vanadate (V6O186-), heptasodium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



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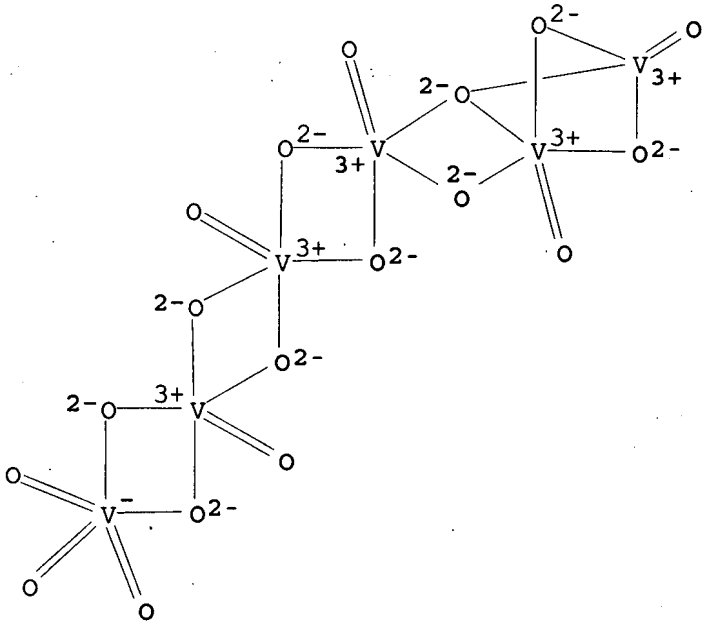
●7 Na^+

RN 300715-06-4 HCAPLUS
CN Vanadate (V6O186-), heptapotassium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A

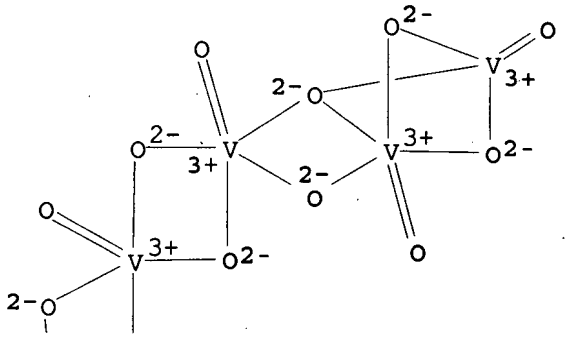


PAGE 2-A

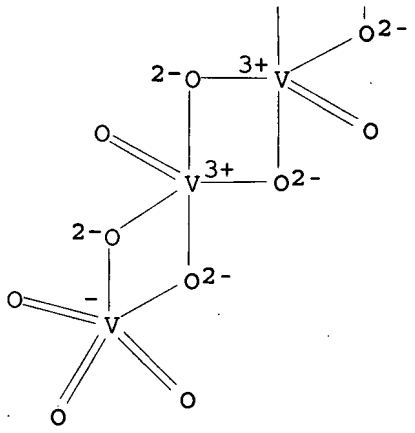
●7 K^+

RN 300715-11-1 HCAPLUS
CN Vanadate (V7O21-), octasodium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



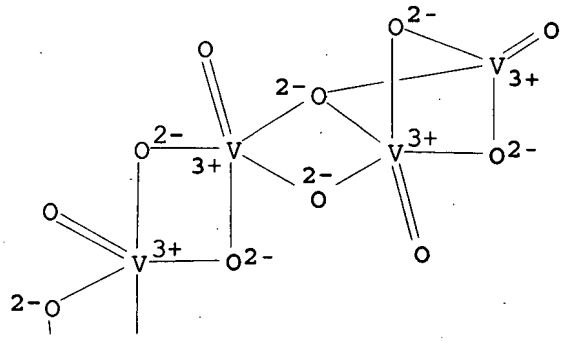
PAGE 2-A



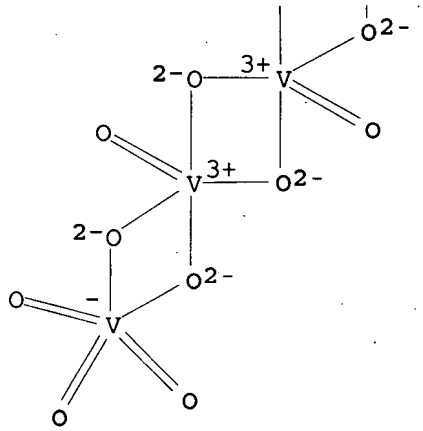
● 8 Na^+

RN 300715-13-3 HCAPLUS
CN Vanadate (V7O217-), octapotassium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



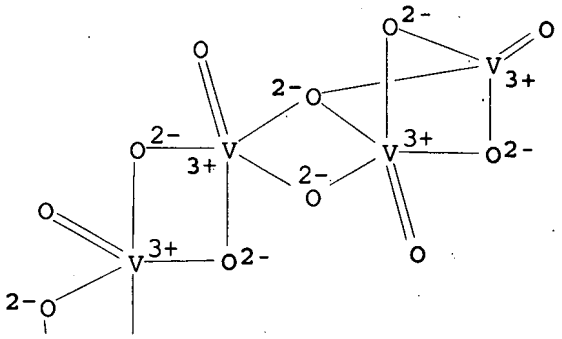
PAGE 2-A



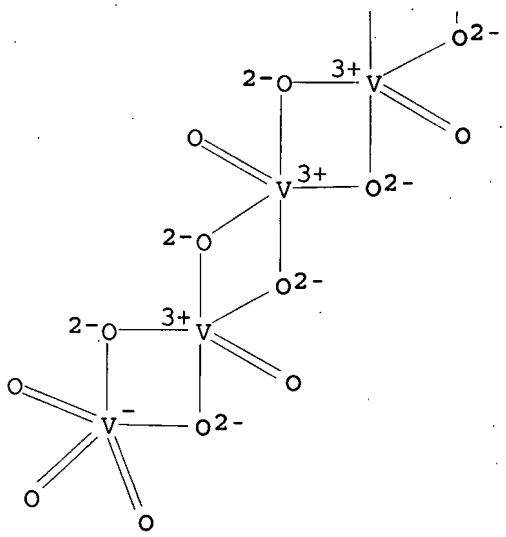
●8 K^+

RN 300715-23-5 HCAPLUS
CN Vanadate (V8O248-), nonasodium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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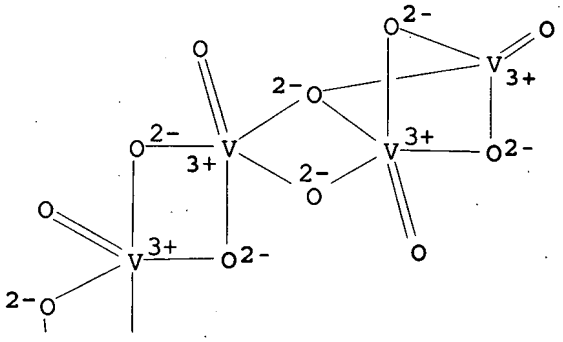
● 9 Na^+

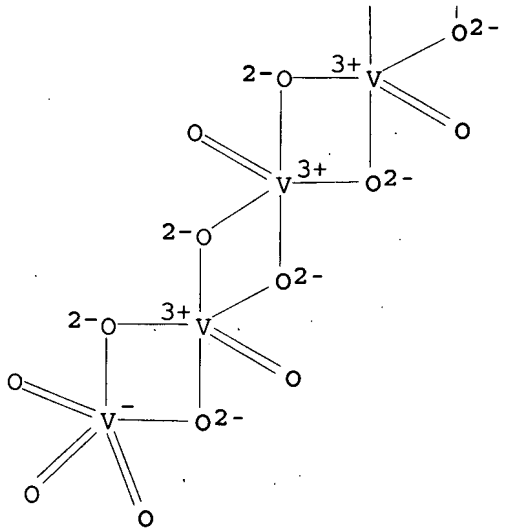
RN 300715-27-9 HCAPLUS

CN Vanadate (V8O248-), nonapotassium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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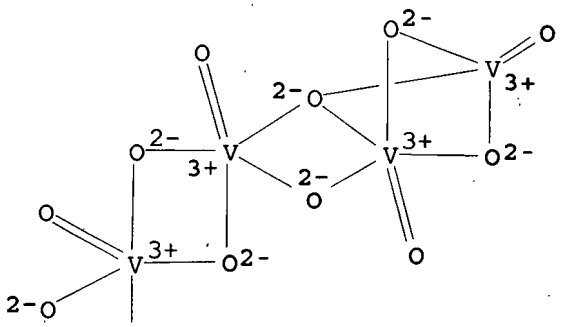
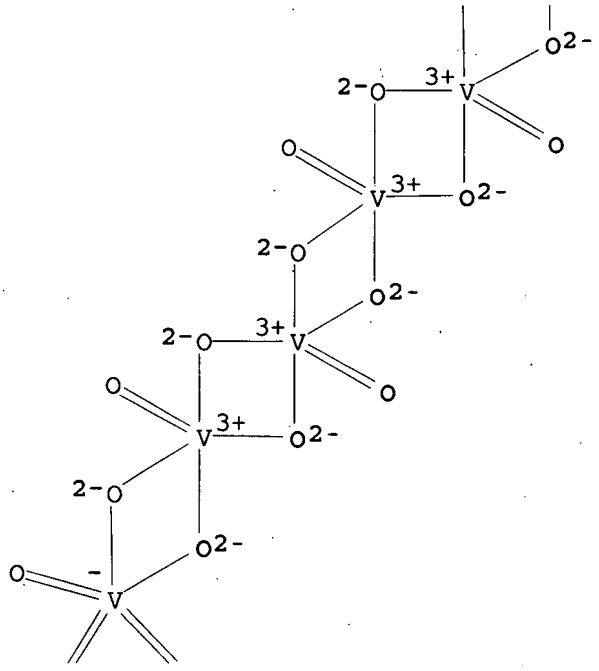
●9 K+

RN 300715-29-1 HCAPLUS
CN Vanadate (V9O279-), decasodium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A



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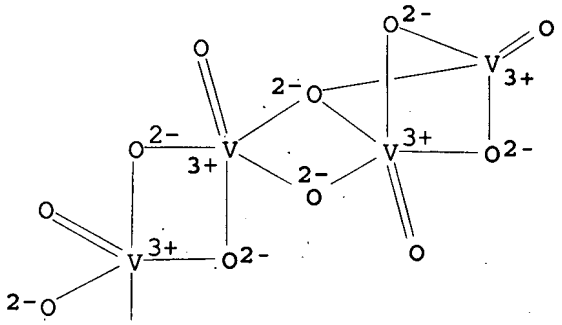
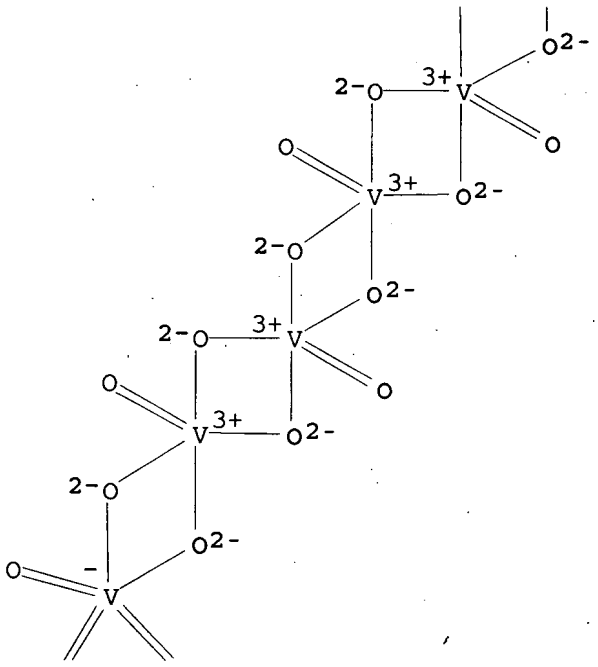
●10 Na^+

RN 300715-30-4 HCAPLUS
CN Vanadate (V9O279-), decapotassium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A

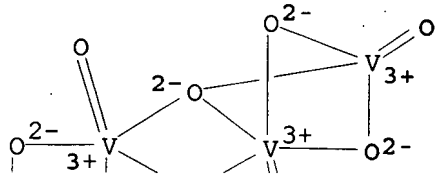


PAGE 3-A

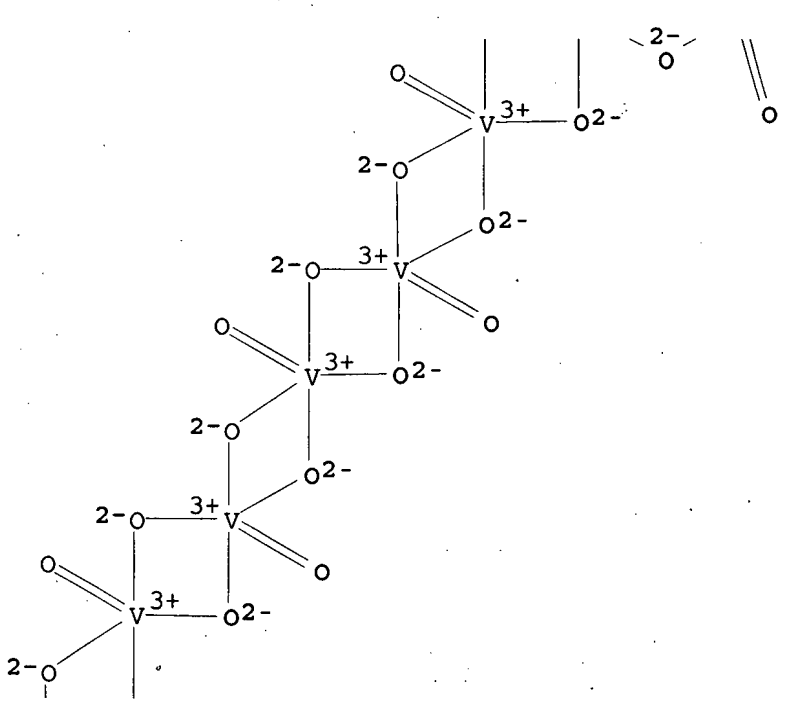
●10 K^+

RN 300715-31-5 HCAPLUS
CN Vanadate (V10O30 10-), undecasodium, stereoisomer (9CI) (CA INDEX NAME)

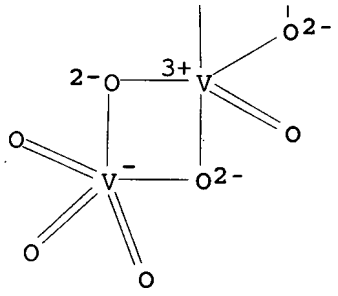
PAGE 1-A



PAGE 2-A



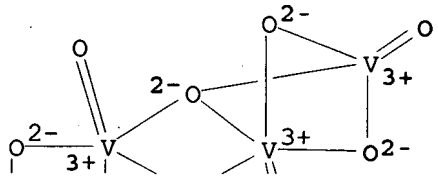
PAGE 3-A



●11 Na^+

RN 300715-32-6 HCAPLUS
CN Vanadate (V10O3010-), undecapotassium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-A



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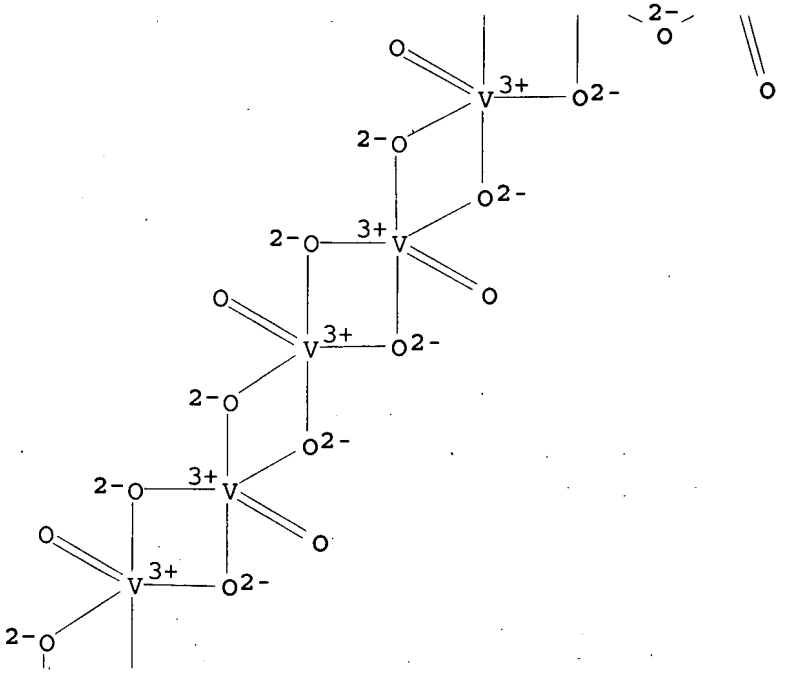

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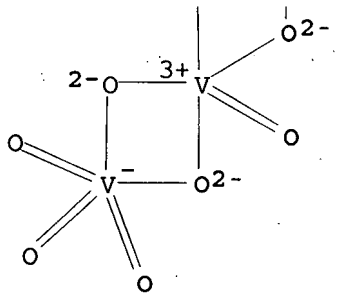
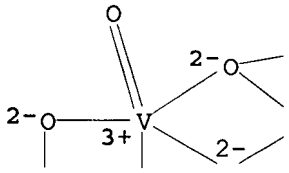


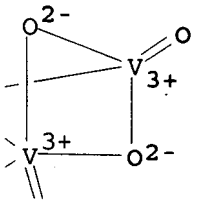
●11 K^+

RN 300715-33-7 HCAPLUS
CN Vanadate (V1103311-), dodecapotassium, stereoisomer (9CI) (CA INDEX NAME)

PAGE 1-B



PAGE 1-C



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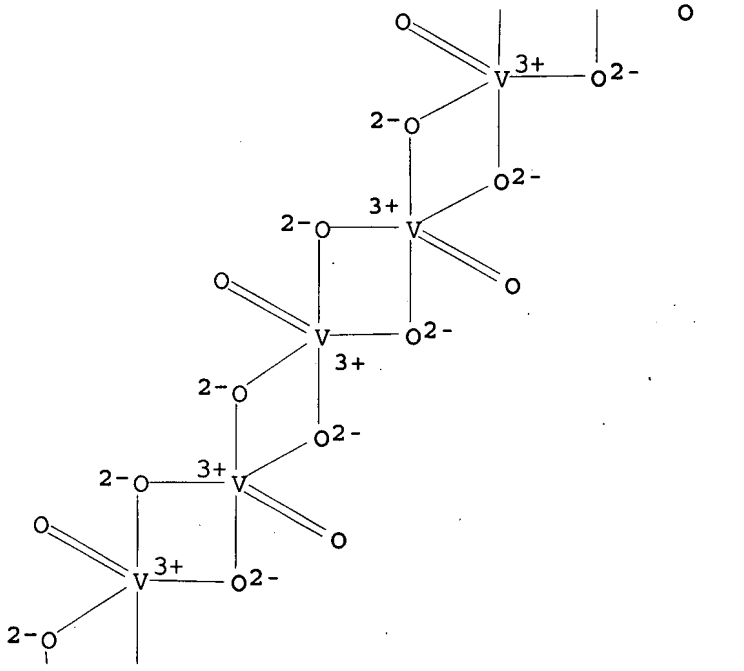

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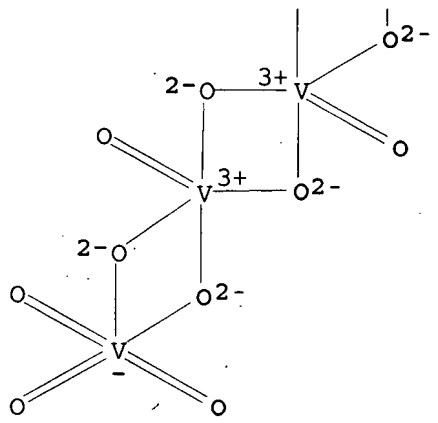
PAGE 3-A

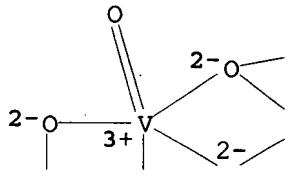
●12 K^+

PAGE 3-B

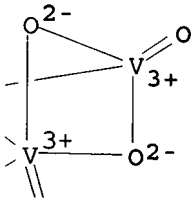


RN 300715-34-8 HCAPLUS
CN Vanadate (V1103311-), dodecasodium, stereoisomer (9CI) (CA INDEX NAME)

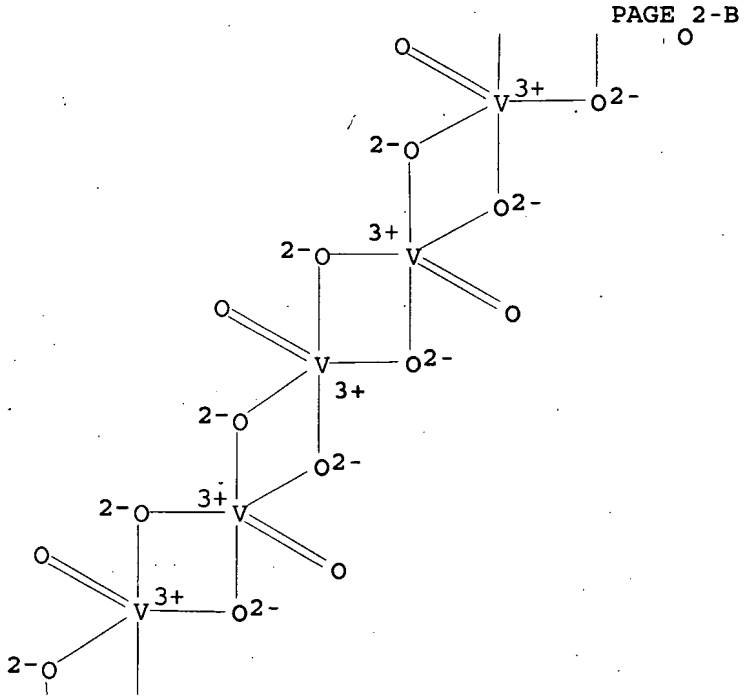
PAGE 1-B



PAGE 1-C



PAGE 2-B



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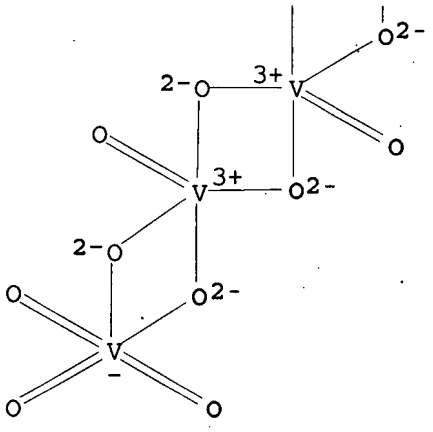
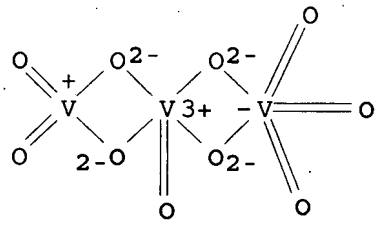
PAGE 3-A

●12 Na^+

PAGE 3-B

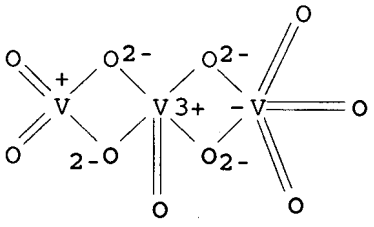


RN 300715-37-1 HCAPLUS
CN Vanadate (V3O10 5-), hexasodium, stereoisomer (9CI) (CA INDEX NAME)



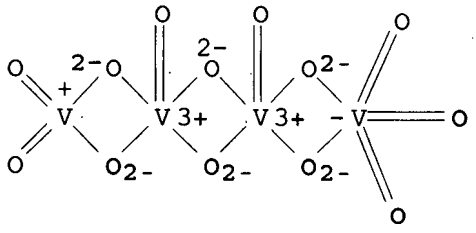
●6 Na^+

RN 300715-38-2 HCAPLUS
CN Vanadate (V3O10 5-), hexapotassium, stereoisomer (9CI) (CA INDEX NAME)



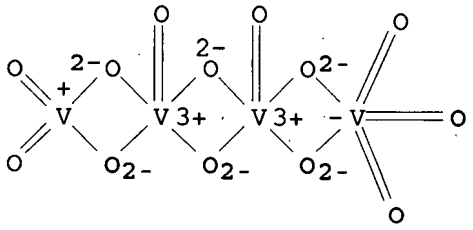
●6 K^+

RN 300715-40-6 HCAPLUS
CN Vanadate (V4O13 6-), heptasodium, stereoisomer (9CI) (CA INDEX NAME)



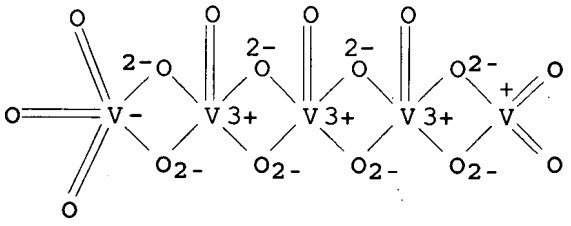
●7 Na^+

RN 300765-39-3 HCAPLUS
CN Vanadate ($V_4O_{13}^{6-}$), heptapotassium, stereoisomer (9CI) (CA INDEX NAME)



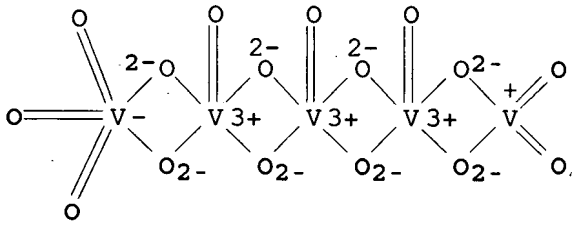
●7 K^+

RN 300765-40-6 HCAPLUS
CN Vanadate ($V_5O_{16}^{7-}$), octasodium, stereoisomer (9CI) (CA INDEX NAME)



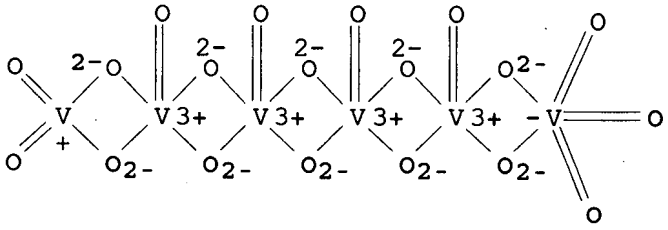
●8 Na^+

RN 300765-41-7 HCAPLUS
CN Vanadate ($V_5O_{16}^{7-}$), octapotassium, stereoisomer (9CI) (CA INDEX NAME)



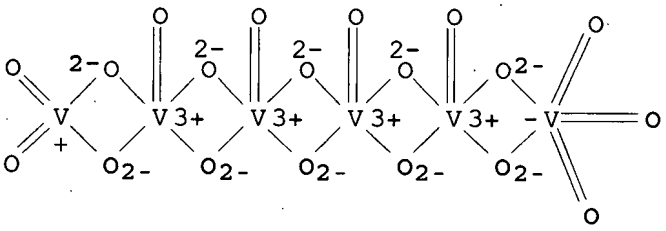
●8 K+

RN 300765-42-8 HCAPLUS
CN Vanadate (V6O198-), nonasodium, stereoisomer (9CI) (CA INDEX NAME)



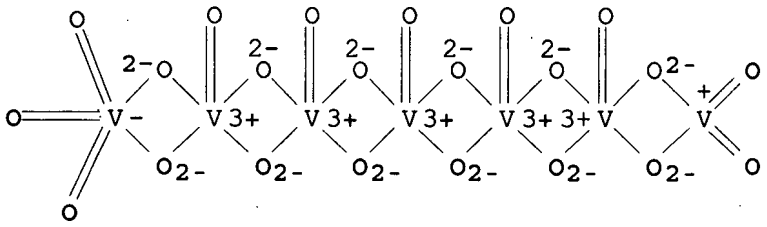
●9 Na+

RN 300765-43-9 HCAPLUS
CN Vanadate (V6O198-), nonapotassium, stereoisomer (9CI) (CA INDEX NAME)



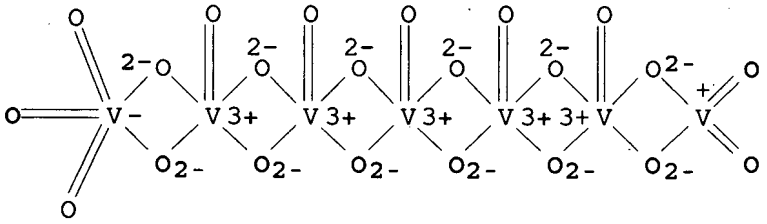
●9 K+

RN 300765-44-0 HCAPLUS
CN Vanadate (V7O229-), decasodium, stereoisomer (9CI) (CA INDEX NAME)



●10 Na^+

RN 300765-45-1 HCAPLUS
CN Vanadate ($V_7O_{22}^{9-}$), decapotassium, stereoisomer (9CI) (CA INDEX NAME)



●10 K^+

RN 300765-46-2 HCAPLUS
CN Vanadate ($V_8O_{25}^{10-}$), undecasodium, stereoisomer (9CI) (CA INDEX NAME)

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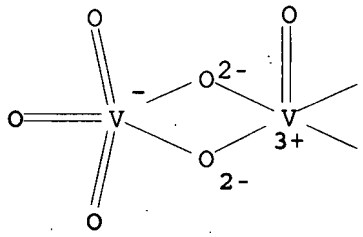
●11 Na^+

PAGE 1-B



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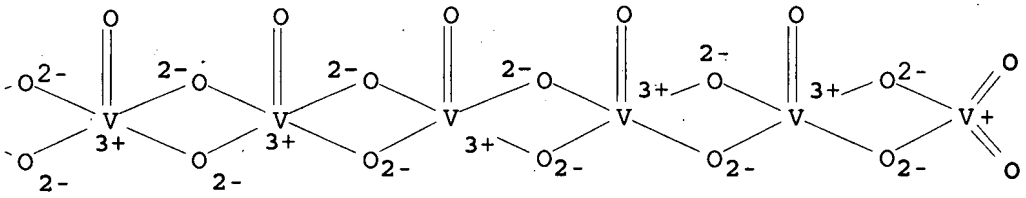
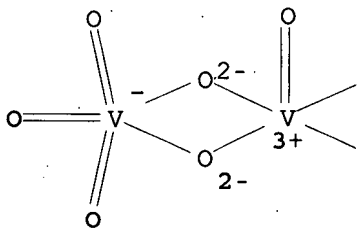


RN 300765-47-3 HCAPLUS
CN Vanadate (V8O2510-), undecapotassium, stereoisomer (9CI) (CA INDEX NAME)

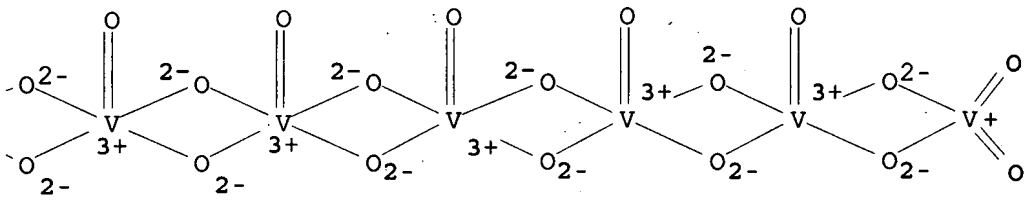
PAGE 1-A

●11 K^+

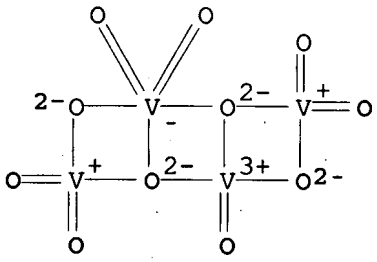
PAGE 1-B



PAGE 1-C

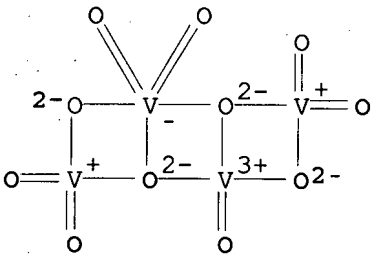


RN 300765-48-4 HCAPLUS
CN Vanadate (V4O114-), pentasodium, stereoisomer (9CI) (CA INDEX NAME)



●5 Na^+

RN 300765-49-5 HCAPLUS
CN Vanadate (V4O114-), pentapotassium, stereoisomer (9CI) (CA INDEX NAME)



●5 K^+

CC 78-9 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 73
IT 7803-55-6 12200-86-1 12200-88-3 12208-00-3 13718-26-8
13769-43-2 15060-59-0, Lithium vanadium oxide (LiVO3) 125717-05-7
131906-46-2 131906-47-3 131906-48-4 199607-60-8 300685-23-8
300685-25-0 300685-27-2 **300685-29-4** 300685-31-8

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300685-43-2 **300685-45-4** 300685-47-6 300685-49-8
300685-51-2 300685-53-4 300685-55-6 300685-57-8 300685-59-0
300685-61-4 300685-63-6 300685-65-8 300685-66-9 300685-67-0
300685-69-2 300685-71-6 300685-74-9 300685-76-1 300685-78-3
300685-80-7 300685-82-9 300685-84-1 300685-86-3 300685-90-9
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300765-52-0 300765-53-1 300765-54-2 300765-55-3 300765-56-4
300765-57-5
(unknown isopolyoxovanadate species detected by electrospray mass spectrometry)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 6 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:19995 HCAPLUS
DOCUMENT NUMBER: 132:245306
TITLE: Polyoxometalates from heteropoly "brown" precursors. A new structural class of mixed valence heteropolytungstates, [(XO4)WIV3WVI17O62Hx]n-
AUTHOR(S): Dickman, Michael H.; Ozeki, Tomoji; Evans, Howard T., Jr.; Rong, Chaoying; Jameson, Geoffrey B.; Pope, Michael T.
CORPORATE SOURCE: Department of Chemistry, Georgetown University, Washington, DC, 20057-1227, USA
SOURCE: Dalton (**2000**), (2), 149-154
CODEN: DALTFG; ISSN: 1470-479X
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 10 Jan 2000

AB Reduction of the α-Keggin anion [Xn+O4W12O36][8-n]- (X = H22+, B3+, Si4+) by six electrons results in the known W brown species [Xn+O4(H2O)3WIV3WVI9O33][8-n]- in which three W atoms were reduced from WVI to WIV, forming a metal-metal bonded triad. The WIV atoms have terminal H2O **coordinated** in place of terminal oxo groups. Addnl. tungstate can condense onto these H2O mols. in aqueous solution between pH = 4 and 6.5 to form the species reported here, [(XO4)WIV3WVI17O62Hx]y-. The B derivative (X = B3+) is more stable than the metatungstate (X = H22+), both of which were characterized by elemental anal., 183W NMR and x-ray crystal structure anal. Eight addnl. tungstate groups condense as a partial Keggin structure containing two triads and one dyad which is rotated 60° relative to a hypothetical α-isomer.

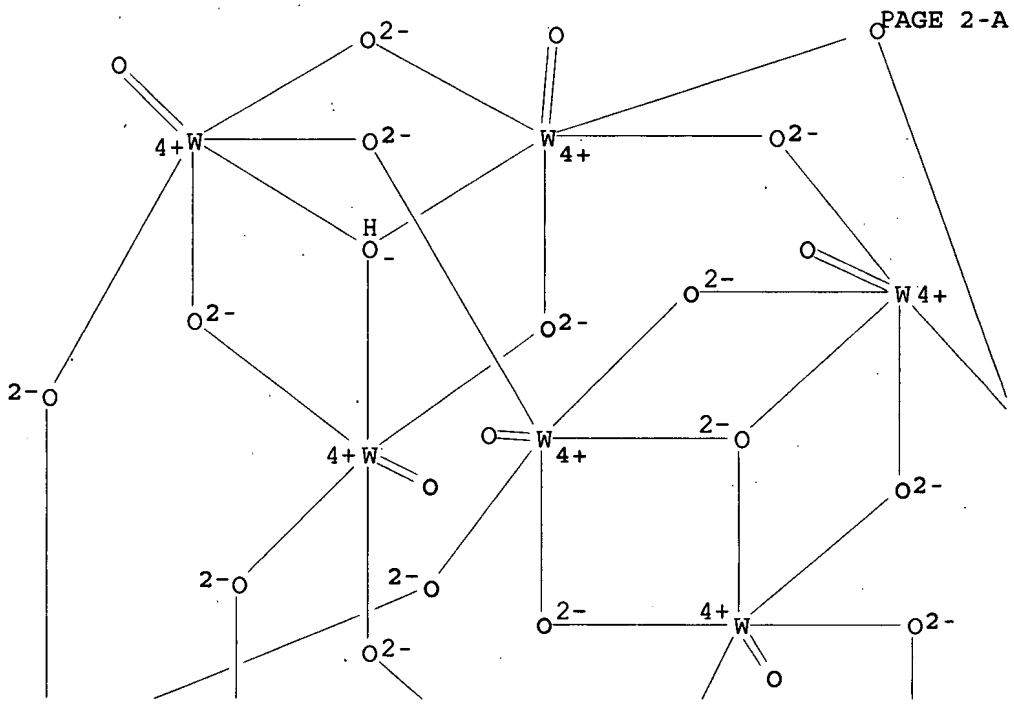
IT **261764-89-0P**
(for preparation of mixed valence isopolytungstate)

RN 261764-89-0 HCAPLUS

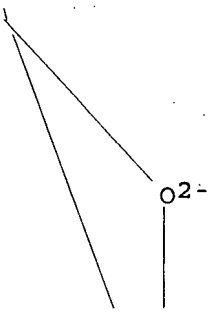
CN Tungstate (W(OH)2O3814-), hexasodium octahydrogen (9CI) (CA INDEX NAME)

PAGE 1-A

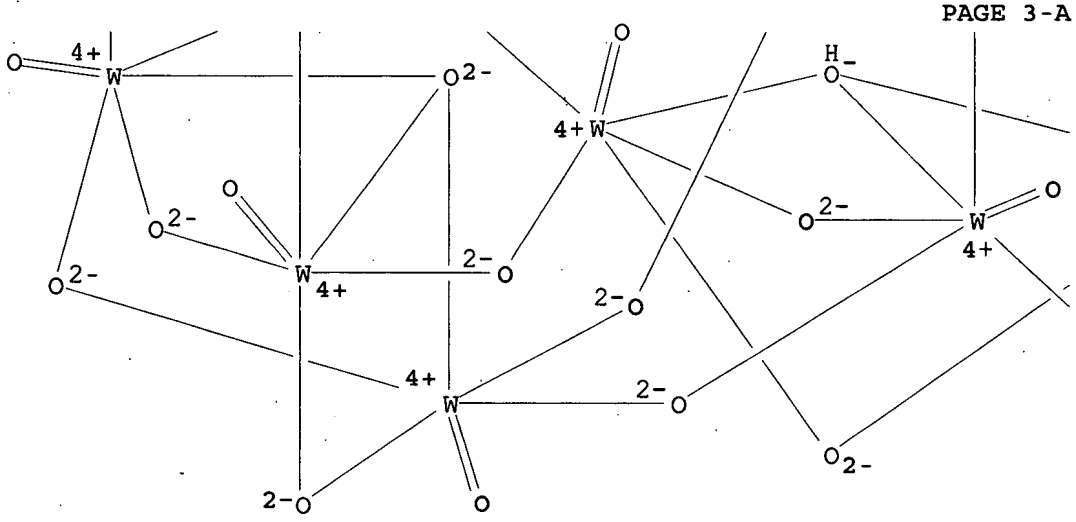
PAGE 2-A



PAGE 2-B

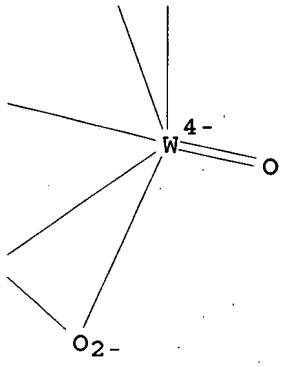


PAGE 3-A



●8 H^+

PAGE 3-B



●6 Na^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT 11120-01-7P, Sodium tungsten oxide 12207-61-3P, Tungstate (W12(OH)20O38-) 13472-45-2P **261764-89-0P**
(for preparation of mixed valence isopolytungstate)
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 7 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2000:12292 HCAPLUS
DOCUMENT NUMBER: 132:160378
TITLE: Framework materials containing polyoxovanadates as building units: synthesis and characterization of (N2H5)2[M3(H2O)12V18O42(EO4)]·24H2O (M = Mg, Ca) and Li6[Mn3(H2O)12V18O42(EO4)]·24H2

O (E = V, S)

AUTHOR(S): Khan, M. Ishaque; Yohannes, Elizabeth; Doedens, Robert J.; Tabussum, Saadia; Cevik, Sabri; Manno, Larry; Powell, Douglas
CORPORATE SOURCE: Department of Biological, Chemical, and Physical Sciences, Illinois Institute of Technology, Chicago, IL, 60616, USA
SOURCE: Crystal Engineering (**1999**), 2(2/3), 171-179
CODEN: CRYEF8; ISSN: 1463-0184
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 06 Jan 2000
AB The reaction of an aqueous solution of lithium vanadate with hydrazinium sulfate results in a dark-colored solution that reacts with magnesium sulfate heptahydrate, calcium sulfate dihydrate, and manganese(II) chloride tetrahydrate to yield single crystals of (N2H5)2[M3(H2O)12V18O42(EO4)]·24H2O (M = Mg, Ca) and Li6[Mn3(H2O)12V18O42(EO4)]·24H2O (E = V, S), resp. The crystal structures of the new solids consist of interpenetrating three-dimensional networks of {V18O42(EO4)} clusters interlinked via bridging {M(H2O)4} (M = Mg, Ca, Mn) groups. The voids in these structures are occupied by lattice water and ion exchangeable **cations.**

IT **257957-01-0DP**, solid solution with sulfate-encapsulated analog
257957-05-4DP, solid solution with sulfate-encapsulated analog
(preparation and crystal and mol. structure)

RN 257957-01-0 HCAPLUS

CN Magnesium(2+), tetraaqua-, (T-4)-, hydrazinium(1+) tetracosa-μ3-oxooctadecaoxooctadecavanadate(5-) (T-4)-tetraoxovanadate(3-) (3:2:1:1), tetracosahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 257957-00-9
CMF H8 Mg O4 . 2/3 H5 N2 . 1/3 O42 V18 . 1/3 O4 V

CM 2

CRN 257956-99-3
CMF O42 V18
CCI CCS

PAGE 1-A

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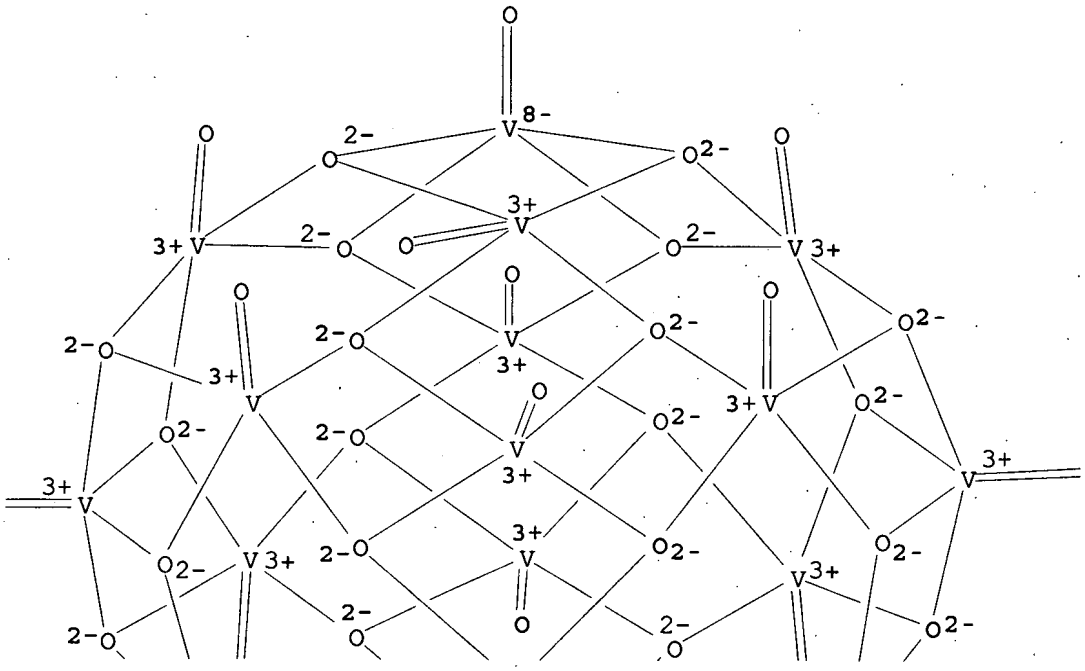
PAGE 1-B



PAGE 1-C

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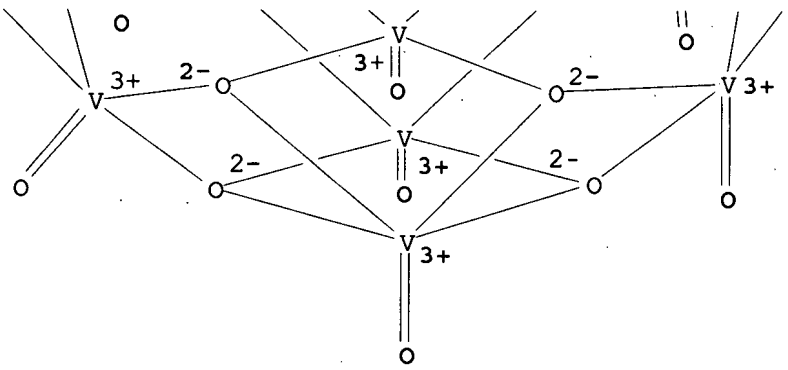
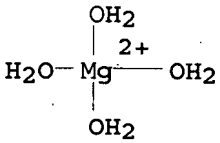
PAGE 2-B



CM 3

CRN 50972-66-2
CMF H8 Mg O4
CCI CCS



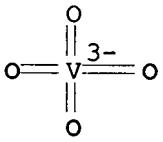
CM 4

CRN 18500-32-8
CMF H5 N2

$^{+}H_3N-NH_2$

CM 5

CRN 14333-18-7
CMF O4 V
CCI CCS



RN 257957-05-4 HCAPLUS
CN Manganese(2+), tetraaqua-, (T-4)-, hydrazinium(1+) tetracosa-μ3-oxooctadecaoxooctadecavanadate(5-) (T-4)-tetraoxovanadate(3-) (3:2:1:1), tetracosahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 257957-04-3
CMF H8 Mn O4 . 2/3 H5 N2 . 1/3 O42 V18 . 1/3 O4 V

CM 2

CRN 257956-99-3
CMF O42 V18
CCI CCS

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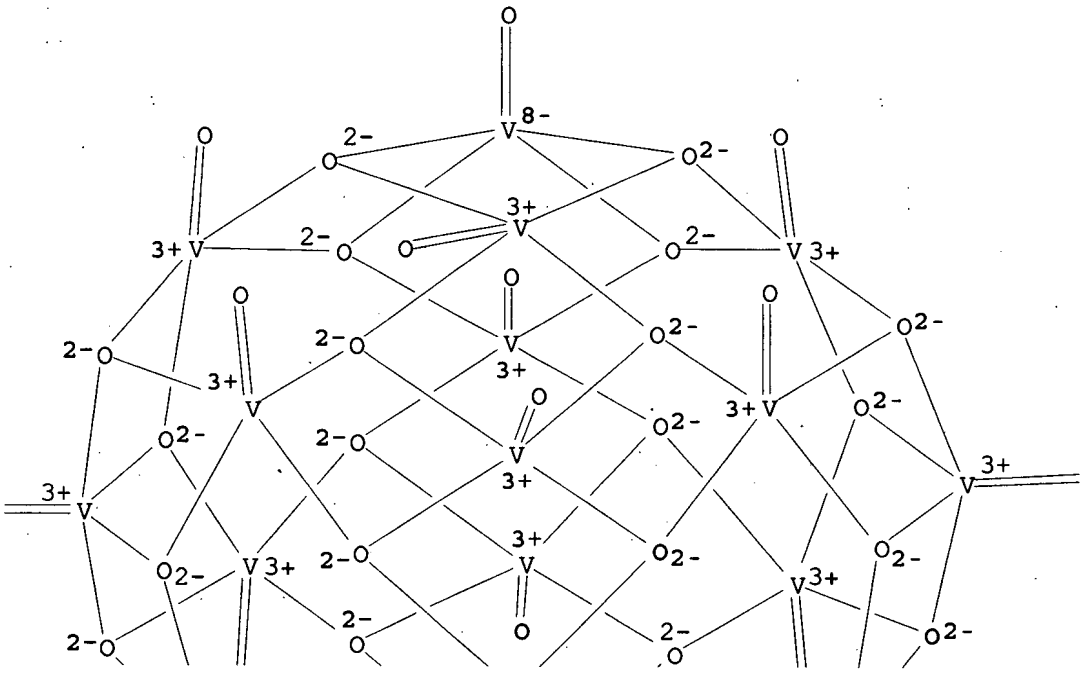
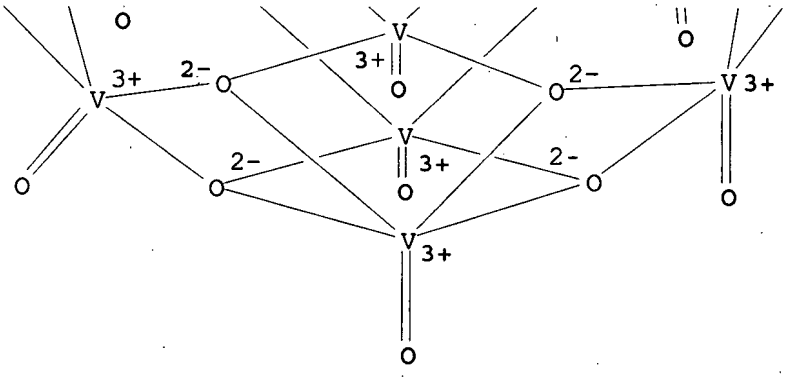


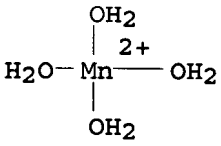
PAGE 1-C

PAGE 2-B



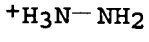
CM 3

CRN 220177-49-1
CMF H8 Mn O4
CCI CCS



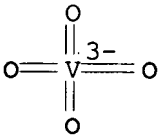
CM 4

CRN 18500-32-8
CMF H5 N2



CM 5

CRN 14333-18-7
CMF O4 V
CCI CCS



IT **257957-03-2DP**, solid solution with sulfate-encapsulated analog (preparation and x-ray diffraction)
RN 257957-03-2 HCAPLUS

CN Calcium(2+), tetraaqua-, (T-4)-, hydrazinium(1+) tetracosa-μ3-oxooctadecaoxooctadecavanadate(5-) (T-4)-tetraoxovanadate(3-) (3:2:1:1), tetracosahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 257957-02-1
CMF Ca H8 O4 . 2/3 H5 N2 . 1/3 O42 V18 . 1/3 O4 V

CM 2

CRN 257956-99-3
CMF O42 V18
CCI CCS

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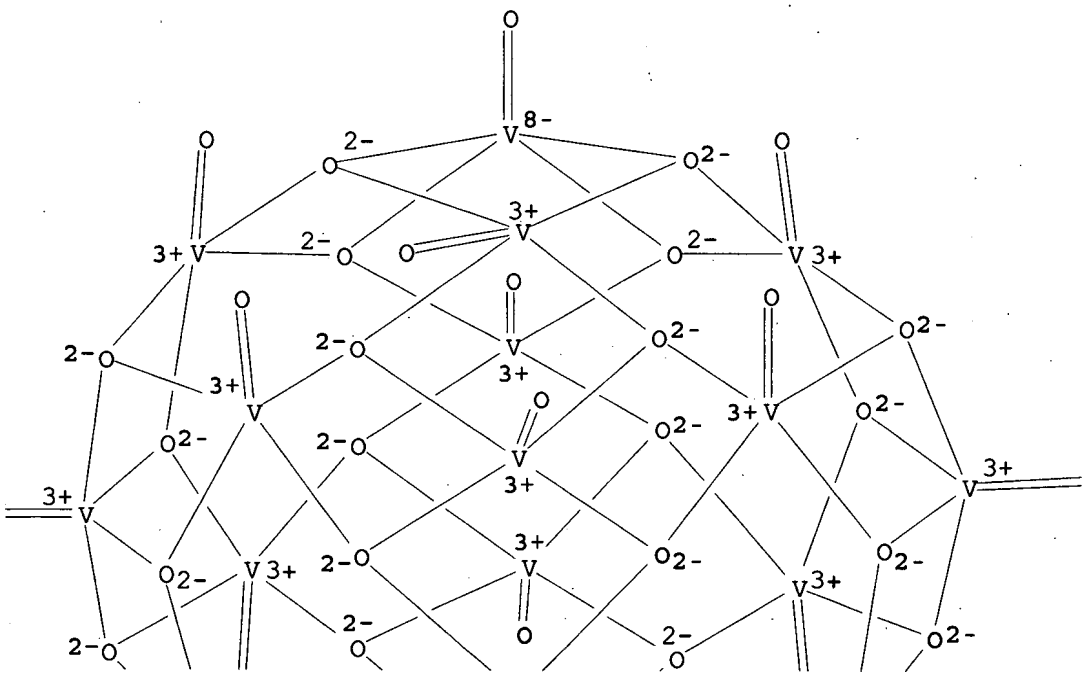
PAGE 1-B



PAGE 1-C

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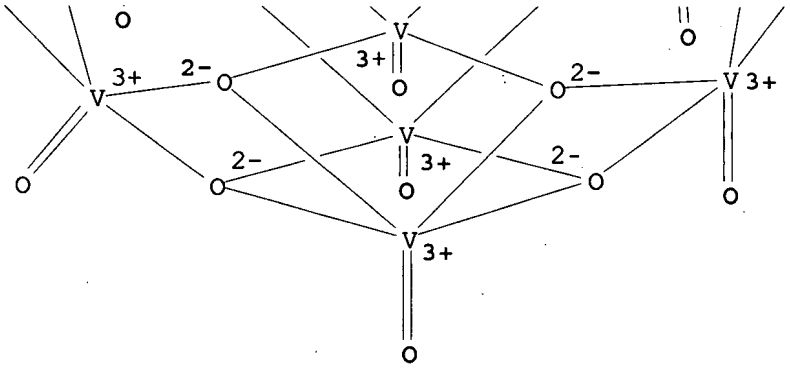
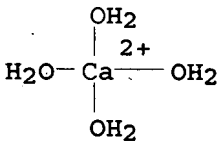
PAGE 2-B



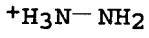
CM 3

CRN 81407-20-7
CMF Ca H8 O4
CCI CCS



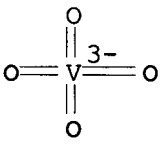
CM 4

CRN 18500-32-8
CMF H5 N2



CM 5

CRN 14333-18-7
CMF O4 V
CCI CCS



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT Crystal structure

Molecular structure
(of polyoxovanadate vanadate/sulfate-encapsulated clusters interlinked into interpenetrating three-dimensional networks by magnesium and manganese tetraaqua complex **cations**)

IT Cluster compounds
(oxygen-vanadium; preparation and crystal and mol. structure of polyoxovanadate vanadate/sulfate-encapsulated clusters interlinked into interpenetrating three-dimensional networks by magnesium, calcium and manganese tetraaqua complex **cations**)

IT 1310-65-2, Lithium hydroxide (LiOH) 1314-62-1, Vanadium oxide (V2O5), reactions 5341-61-7, Hydrazinium dichloride 7487-88-9, Magnesium sulfate, reactions 7773-01-5, Manganese(II) chloride 7778-18-9, Calcium sulfate 10034-93-2, Hydrazinium sulfate
(for preparation of polyoxovanadate vanadate/sulfate-encapsulated clusters interlinked into interpenetrating three-dimensional networks by divalent metal tetraaqua complex **cations**)

IT **257957-01-0DP**, solid solution with sulfate-encapsulated analog
257957-05-4DP, solid solution with sulfate-encapsulated analog
257957-08-7DP, solid solution with vanadate-encapsulated analog
257957-12-3DP, solid solution with vanadate-encapsulated analog
(preparation and crystal and mol. structure)

IT **257957-03-2DP**, solid solution with sulfate-encapsulated analog
257957-10-1DP, solid solution with vanadate-encapsulated analog
(preparation and x-ray diffraction)

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 8 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:676249 HCAPLUS
DOCUMENT NUMBER: 132:8466
TITLE: An inorganic tire-tread lattice: hydrothermal synthesis of the layered vanadate [N(CH3)4]5V18O46 with a supercell structure
AUTHOR(S): Koene, Bryan E.; Taylor, Nicholas J.; Nazar, Linda F.
CORPORATE SOURCE: Department of Chemistry, University of Waterloo, Waterloo, ON, N2L 3G1, Can.
SOURCE: Angewandte Chemie, International Edition (**1999**), 38(19), 2888-2891
CODEN: ACIEF5; ISSN: 1433-7851
PUBLISHER: Wiley-VCH Verlag GmbH
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 24 Oct 1999
AB The polyoxovanadate (Me4N)5V18O46 is prepared by hydrothermal reaction of V2O5, V2O3, Me4NCl, and Me4NOH (pH adjusted to 5.0 with HNO3). Other products are layered vanadate (Me4N)V4O10 and the known cluster (Me4N)6V15O36.Cl.4H2O. A crystal structure study of (Me4N)5V18O46 reveals a tire-tread lattice self-assembled from two distinct [V9O23] building blocks, neither of which forms repeating lattices on its own. One building block is neutral and the other carries localized electrons and is neg. charged. Organic **cations** reside between the layers. Formation of this unusual lattice appears to be driven by thermodn. factors that minimize strain in the mixed-alternating lattice.

IT **110550-46-4P**
(hydrothermal preparation with other polyoxovanadates)

RN 110550-46-4 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, μ6-chlorotri-μ-oxooctadeca-

μ3-oxopentadecaoxopentadecavanadate(6-) (6:1), tetrahydrate (9CI)
(CA INDEX NAME)

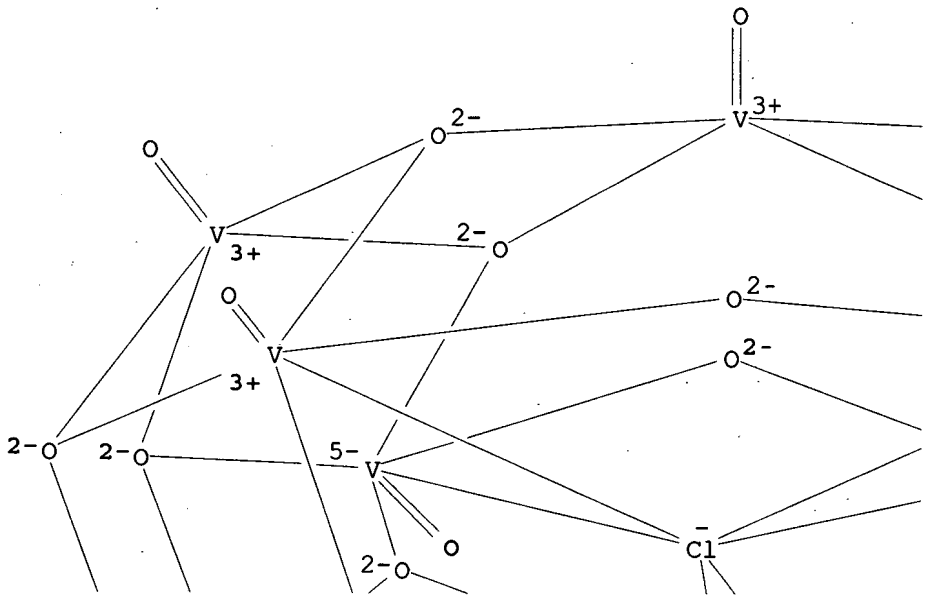
CM 1

CRN 110550-45-3
CMF C4 H12 N . 1/6 Cl O36 V15

CM 2

CRN 441286-66-4
CMF Cl O36 V15
CCI CCS

PAGE 1-A



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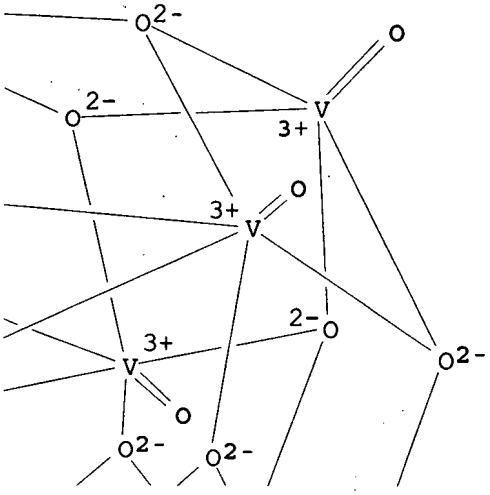

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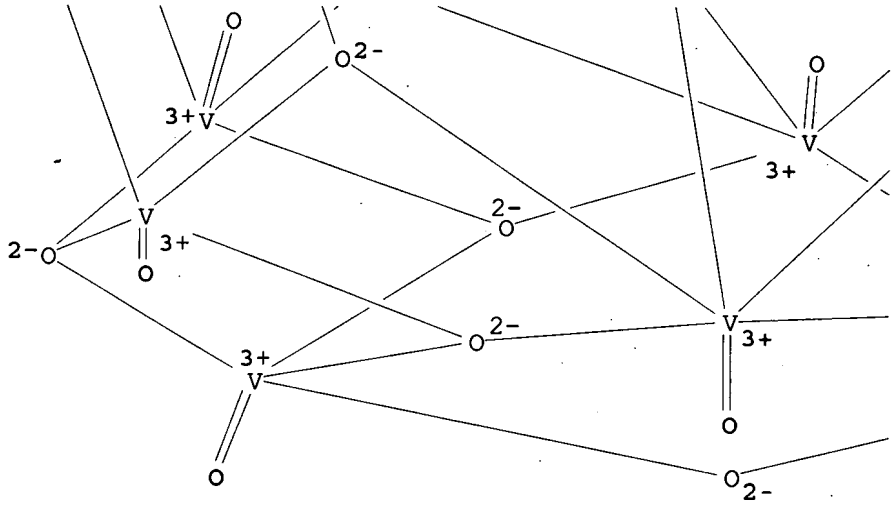

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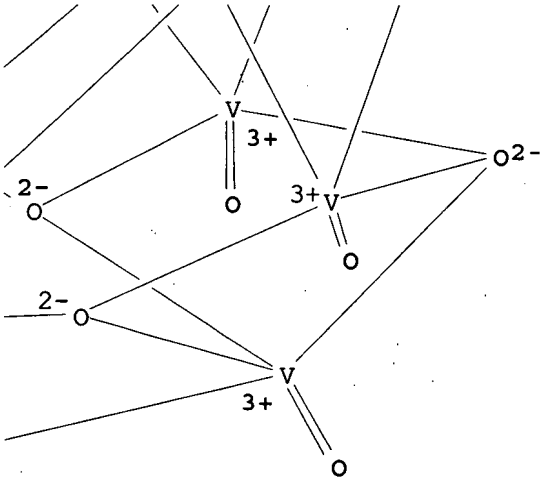
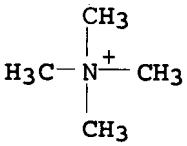


CM 3

CRN 51-92-3
CMF C4 H12 N



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **110550-46-4P** 180604-51-7P
(hydrothermal preparation with other polyoxovanadates)
REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

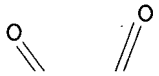
L27 ANSWER 9 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:652504 HCAPLUS
DOCUMENT NUMBER: 131:359513
TITLE: Synthesis, Structure, and Magnetic Properties of (n-Bu4N)2[{Ni(MeOH)2}2{Mo(NO)}2(μ3-OH)2(μ-OMe)4{Mo5O13(OMe)4(NO)}2], a New Type of Polyoxometalate Incorporating a Rhomb-like Cluster
AUTHOR(S): Villanneau, Richard; Proust, Anna; Robert, Francis; Veillet, Pierre; Gouzerh, Pierre
CORPORATE SOURCE: Laboratoire de Chimie Inorganique et Materiaux Moleculaires CNRS ESA 7071, Universite Pierre et Marie Curie, Paris, 75252, Fr.
SOURCE: Inorganic Chemistry (**1999**), 38(22), 4981-4985
CODEN: INOCAJ; ISSN: 0020-1669
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal

LANGUAGE: English
ED Entered STN: 14 Oct 1999
AB The oxo-nitrosyl compound (Bu4N)2[{Na(MeOH)}Mo5O13(OMe)4(NO)]·3MeOH reacts with various Ni(II) salts in MeOH to give (Bu4N)2[{Ni(MeOH)2}2{Mo(NO)}2(μ3-OH)2(μ-OMe)4{Mo5O13(OMe)4(NO)}2], which was characterized by single-crystal x-ray diffraction anal. and magnetic susceptibility measurements. This reaction shows the dual behavior of the defect Lindqvist-type species [Mo5O13(OMe)4(NO)]3-, which can act both as a ligand and as a source of the {Mo(NO)}3+ unit. also, the reaction is reminiscent of the dissoln.-precipitation of oxide supports in the preparation of supported **catalysts** and provides a novel illustration of the potential of polyoxometalates for probing the reactivity of oxides. The new polyoxomolybdate is made of a central rhomb-like {Ni2Mo2} cluster linked to two terminal [Mo5O13(OMe)4(NO)]3- units, each terminal cluster being linked to a Mo center of the central unit through two oxo ligands. The two Ni(II) ions are coupled in a ferromagnetic way (J = 13.1 cm-1).
IT **250371-70-1P**
(preparation, crystal structure and ferromagnetic exchange in)
RN 250371-70-1 HCAPLUS
CN 1-Butanaminium, N,N,N-tributyl-, bis[bis(methanol)nickelate]di-μ3-hydroxydodeca-μ-methoxytetranitrosyldodeca-μ-oxodi-μ5-oxododecaoxododecamolybdate(2-) (2:1) (9CI) (CA INDEX NAME)

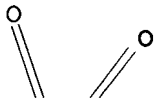
CM 1

CRN 250371-69-8
CMF C16 H54 Mo12 N4 Ni2 O48
CCI CCS

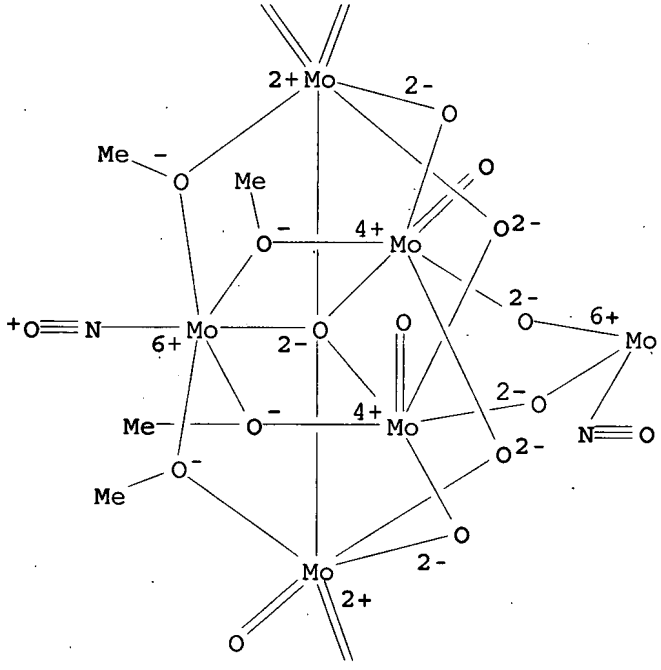
PAGE 1-A



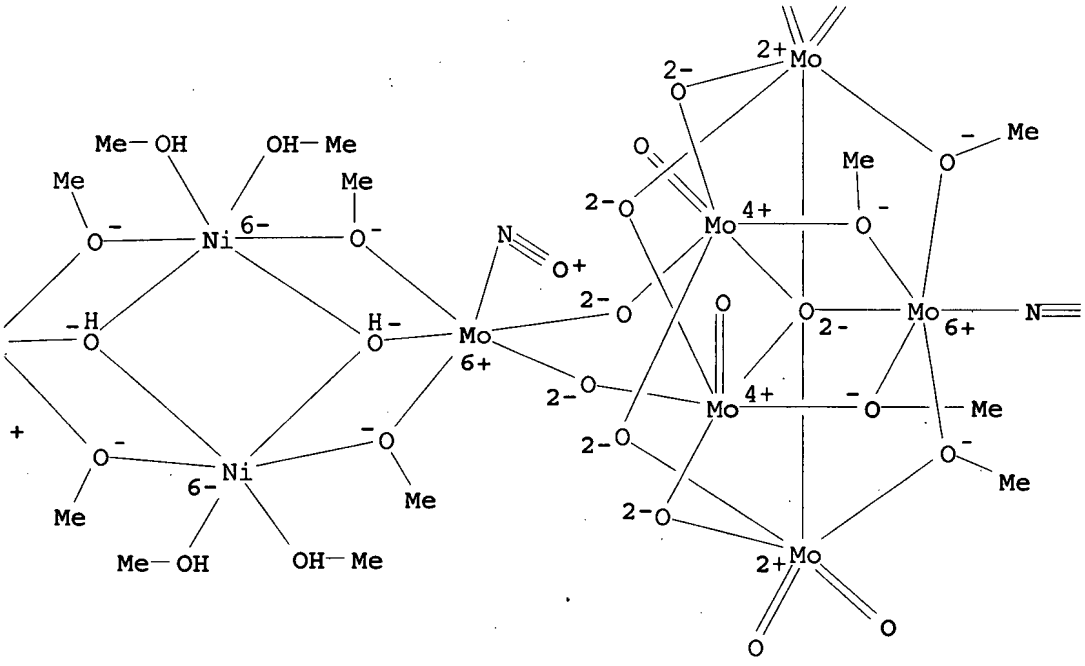
PAGE 1-B



PAGE 2-A



PAGE 2-B



PAGE 2-C

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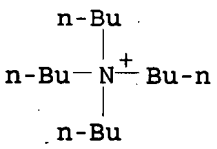
PAGE 3-A

CM 2

CRN 10549-76-5
CMF C16 H36 N



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75, 77
IT **250371-70-1P**
(preparation, crystal structure and ferromagnetic exchange in)
REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 10 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:390671 HCAPLUS
DOCUMENT NUMBER: 131:81056
TITLE: Crystal structure of pentakis(tetraethylammonium) octadecavanadate, [(C2H5)4N]5[V18O42(H2O)]
AUTHOR(S): Shan, Y.; Huang, S. D.
CORPORATE SOURCE: Dep. Chemistry, Univ. Puerto Rico, San Juan, 00931, P. R.
SOURCE: Zeitschrift fuer Kristallographie - New Crystal Structures (**1999**), 214(3), 383-386
CODEN: ZKNSFT; ISSN: 1433-7266
PUBLISHER: R. Oldenbourg Verlag
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 24 Jun 1999
AB The title compound is monoclinic, space group P21/n, a 13.3994(7), b 23.098(1), c 26.379(1) Å, β 90.265(1)°, Z = 4, R = 0.076, Rw = 0.084 for 5576 observed reflections with Io > 2σ(Io). Atom **coordinates** are given. The crystal structure consists of the discrete [V18O42(H2O)]5- anions and [Et4N]+ **cations.** The 18 square pyramids in the anion are connected to each other via the edges forming the spherical V18O42 shell.
IT **228705-58-6P**
(preparation and crystal structure of hydrate anion-encapsulated)
RN 228705-58-6 HCAPLUS
CN Ethanaminium, N,N,N-triethyl-, tetracosa-μ3-oxooctadecaoxooctadecavanadate(5-) (5:1), monohydrate (9CI) (CA INDEX NAME)

CM 1

CRN 228705-57-5
CMF C8 H20 N . 1/5 O42 V18

CM 2

CRN 257956-99-3
CMF O42 V18
CCI CCS

PAGE 1-A

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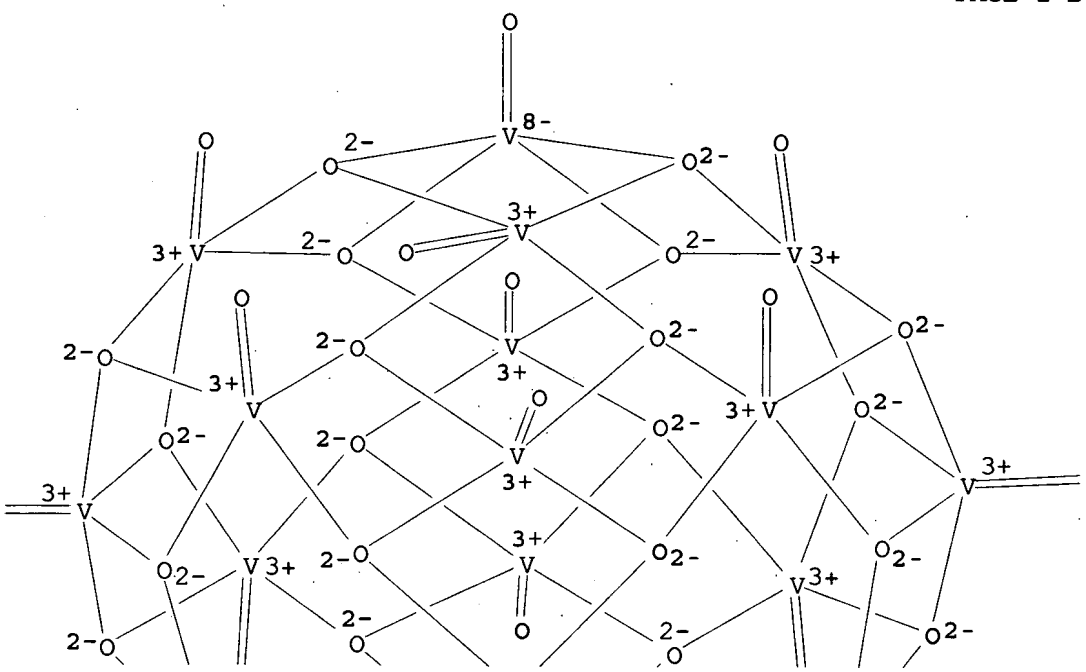
PAGE 1-B



PAGE 1-C

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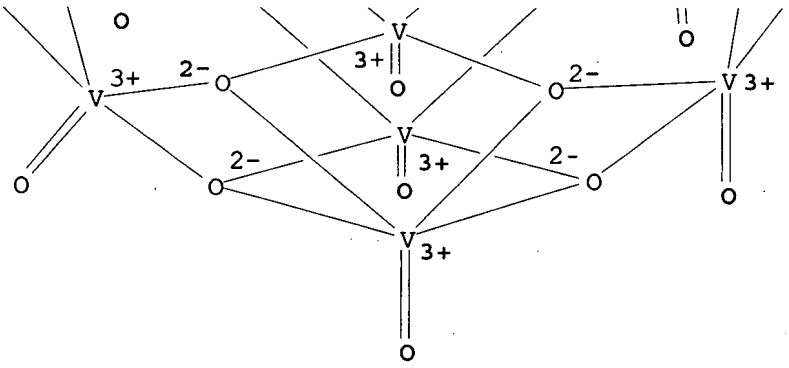
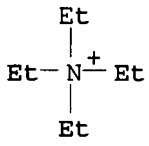
PAGE 2-B



CM 3

CRN 66-40-0
CMF C8 H20 N



CC 75-8 (Crystallography and Liquid Crystals)
Section cross-reference(s): 78
IT **228705-58-6P**
(preparation and crystal structure of hydrate anion-encapsulated)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 11 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1999:99261 HCAPLUS
DOCUMENT NUMBER: 130:217135
TITLE: Chemically controlled condensation of polyoxovanadates
AUTHOR(S): Livage, J.; Bouhedja, L.; Bonhomme, C.
CORPORATE SOURCE: Chimie de la Matiere Condensee, Universite Pierre et Marie Curie, Paris, 75252, Fr.
SOURCE: Journal of Sol-Gel Science and Technology (**1998**), 13(1/2/3), 65-70
CODEN: JSGTEC; ISSN: 0928-0707
PUBLISHER: Kluwer Academic Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 15 Feb 1999
AB A wide range of polyvanadates can be synthesized from aqueous solns. V oxide gels V2O5·nH2O are formed around the point of zero charge (pH ≈ 2). They exhibit a ribbon-like structure. Weak interactions between these ribbons give mesophases in which V oxide gels or sols behave as nematic liquid crystals. Organic species can be easily intercalated between these oxide ribbons giving hybrid nanocomposites made of alternative layers of organic and inorg. components. Hybrid materials can also be formed at a higher pH in the presence of large organic ions such as [NMe4]+. They exhibit layered structures in which organic **cations** lie between polyoxovanadate planes. Such layered structures are not obtained in the presence of anions such as Cl- or I-. Cluster shell polyvanadates are then formed. They are made of neg. charged polyvanadate hollow spheres in which the neg. anion is encapsulated. In this case the organic **cations** behave as counterions for the formation of the hybrid crystalline network.
IT **110550-45-3P**
(preparation by chemical controlled condensation of vanadium pentoxide hydrate gels in presence of tetramethylammonium **cations** or halides)
RN 110550-45-3 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, μ6-chlorotri-μ-oxooctadeca-μ3-oxopentadecaoxopentadecavanadate(6-) (6:1) (CA INDEX NAME)

CM 1

CRN 441286-66-4
CMF Cl O36 V15
CCI CCS

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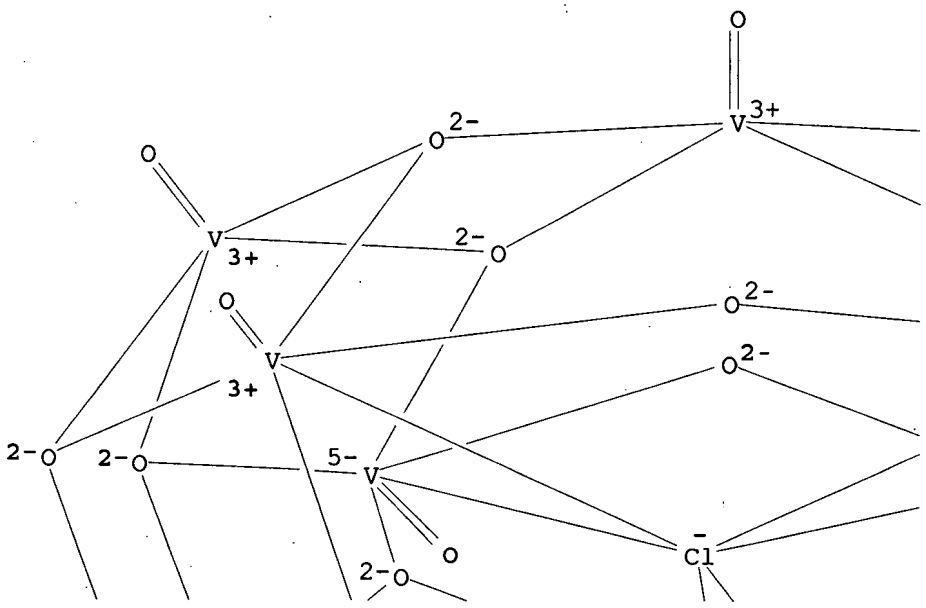
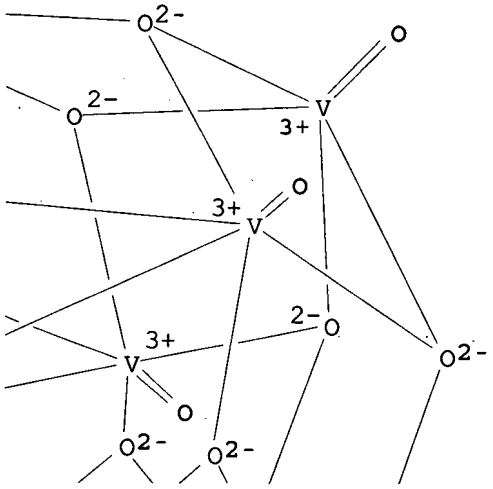
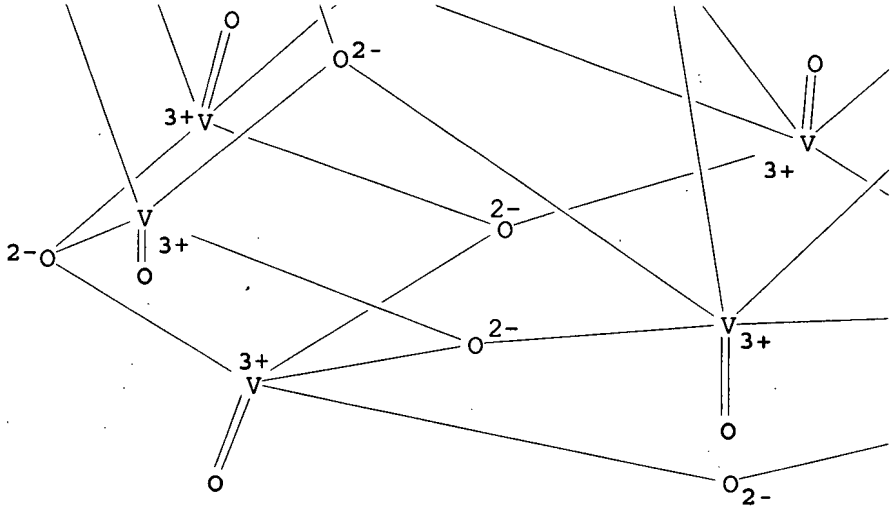


PAGE 1-B



PAGE 2-A



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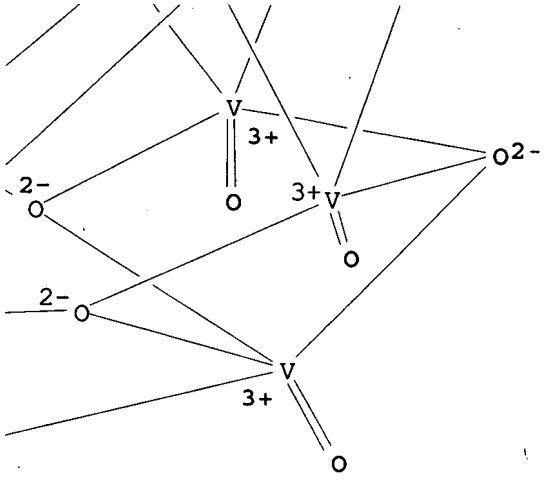
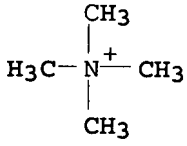


CM 2

CRN 51-92-3
CMF C4 H12 N



CC 78-7 (Inorganic Chemicals and Reactions)
IT Anions

Cations
(effect on chemical controlled condensation of polyoxovanadates)
IT 7440-62-2DP, Vanadium, polyoxovanadates, preparation
110550-45-3P 220941-39-9P
(preparation by chemical controlled condensation of vanadium pentoxide hydrate gels in presence of tetramethylammonium **cations** or halides)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 12 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1998:721905 HCAPLUS
DOCUMENT NUMBER: 130:19872
TITLE: The inserting host-guest system in [N(CH3)4]8[(CH3COO)V22O54].4.25H2O
AUTHOR(S): Chirayil, Thomas; Zavald, Peter Y.; Whittingham, M. Stanley
CORPORATE SOURCE: Materials Res. Center, State Univ. New York Binghamton, Binghamton, NY, 13902-6016, USA
SOURCE: Acta Crystallographica, Section C: Crystal Structure Communications (**1998**), C54(10), 1441-1444
CODEN: ACSCEE; ISSN: 0108-2701
PUBLISHER: Munksgaard International Publishers Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 16 Nov 1998
AB The title compound, octakis(tetramethylammonium) docosavanadate acetate 4.25-hydrate, was synthesized and found to crystallize in tetragonal space group P42/n, with 14.4890(2), c 21.5432(3) Å; Z = 2, dc = 1.993; R = 0.052, Rw = 0.076 for 4991 reflections. Atomic **coordinates** are given. Twenty-two V square pyramids form a barrel-shaped cluster which hosts the acetate ion; this is the 1st case where an organic mol. is hosted by a V oxide cluster. The clusters are linked into a three-dimensional net by H bonds with H2O mols. Me4N+ ions fill the space between the clusters.
IT **216000-88-3P**
(preparation and crystal structure of)
RN 216000-88-3 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, acetate nona-μ-oxotricosa-μ3-oxodocosaoxodocosavanadate(7-), hydrate (32:4:4:17) (9CI) (CA INDEX NAME)

CM 1

CRN 216000-87-2
CMF C4 H12 N . 1/8 C2 H3 O2 . 1/8 O54 V22

CM 2

CRN 216000-86-1
CMF O54 V22
CCI CCS

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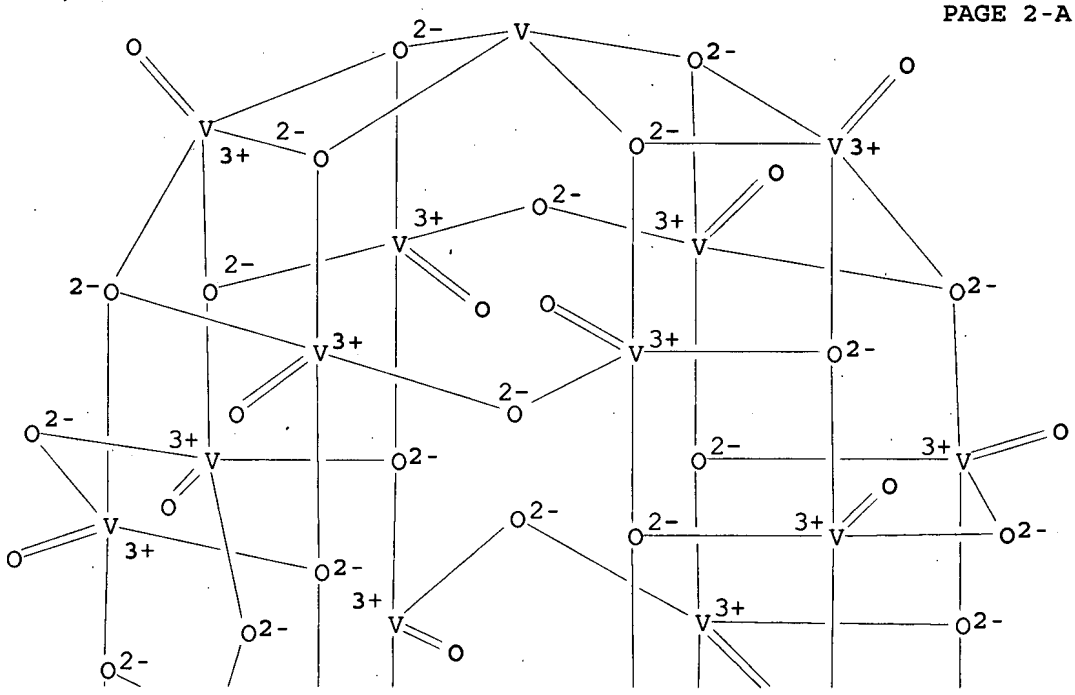

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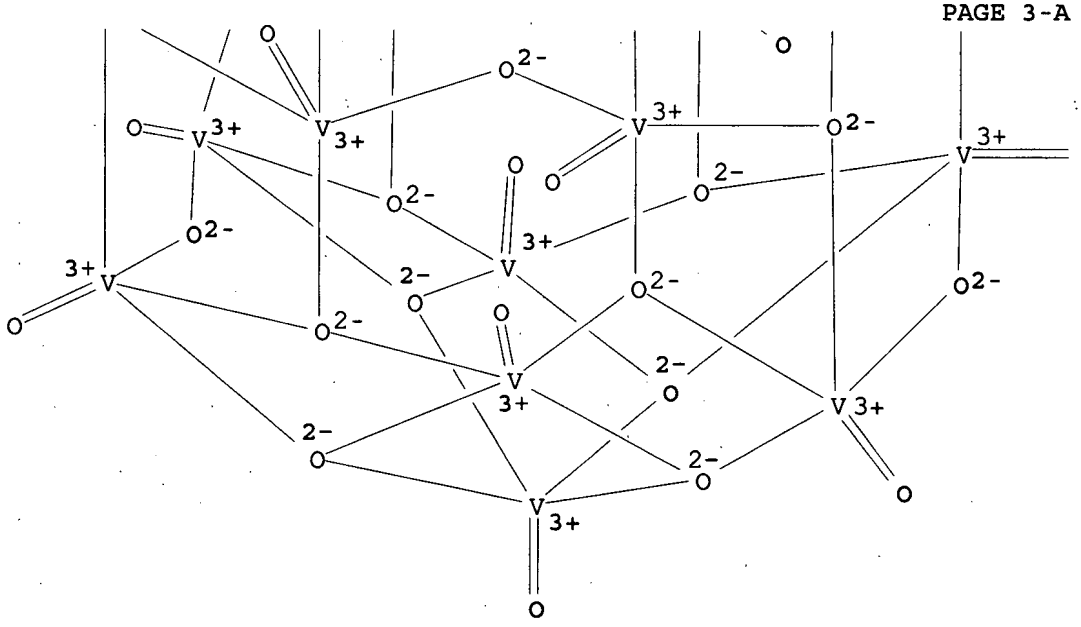

PAGE 3-B

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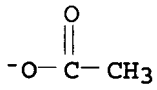
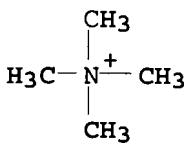
CM 3

CRN 71-50-1
CMF C2 H3 O2



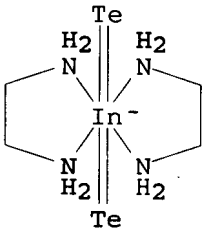
CM 4

CRN 51-92-3
CMF C4 H12 N



CC 78-6 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **216000-88-3P**
(preparation and crystal structure of)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 13 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:658881 HCAPLUS
DOCUMENT NUMBER: 127:302424
TITLE: Synthesis and structure of KIn(en)2SnTe4.1.5en containing a mixed-metal one-dimensional chain
AUTHOR(S): Wang, Chwanchin; Haushalter, Robert C.
CORPORATE SOURCE: NEC Res. Inst., Princeton, NJ, 08540, USA
SOURCE: Chemical Communications (Cambridge) (**1997**), (18), 1719-1720
CODEN: CHCOFS; ISSN: 1359-7345
PUBLISHER: Royal Society of Chemistry
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 17 Oct 1997
AB Reaction of K2Te, SnTe, In2Te3, and Te with ethylenediamine for 3 days results in the preparation of KIn(en)2SnTe4.1.5en (1). 1 Can also be synthesized in 3 wk from the alloy KInSnTe4 and ethylenediamine. The linkage of a **coordination** compound, cis-[In(en)2Te2], and a Zintl anion, [SnTe4], into a 1-dimensional chain by sharing Te atoms is observed for the 1st time in 1.
IT **196940-64-4P**
(preparation and crystal structure)
RN 196940-64-4 HCAPLUS
CN Indate(1-), bis(1,2-ethanediamine-κN,κN')ditelluroxo-, potassium (9CI) (CA INDEX NAME)

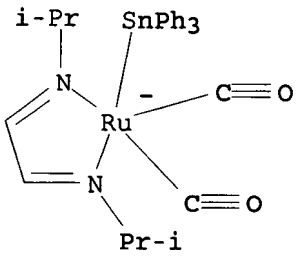


● K^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
ST crystal structure indium ethylenediamine tellurostannate **polymer**; indium ethylenediamine tellurostannate chain prepn structure
IT **196940-64-4P**
(preparation and crystal structure)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE

RE FORMAT

L27 ANSWER 14 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:619669 HCAPLUS
DOCUMENT NUMBER: 127:242362
TITLE: Spectroelectrochemical (UV-vis, IR, NMR, and EPR) Study of the Inorganometallic Complexes Ru(E)(E')(CO)2(iPr-DAB) (E = Cl, E' = SnPh3, PbPh3; E = Me, SnPh3, GePh3, E' = SnPh3; E = E' = PbPh3; iPr-DAB = N,N'-Diisopropyl-1,4-diaza-1,3-butadiene)
AUTHOR(S): Aarnts, Maxim P.; Hartl, Frantisek; Peelen, Karin; Stufkens, Derk J.; Amatore, Christian; Verpeaux, Jean-Noeel
CORPORATE SOURCE: Anorganisch Chemisch Laboratorium J. H. van't Hoff Research Instituut, Universiteit van Amsterdam, Amsterdam, 1018 WV, Neth.
SOURCE: Organometallics (**1997**), 16(21), 4686-4695
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 29 Sep 1997
AB The reduction paths of two series of Ru complexes, Ru(Cl)(E')(CO)2(iPr-DAB) (E' = SnPh3, PbPh3, iPr-DAB = N,N'-diisopropyl-1,4-diaza-1,3-butadiene) and Ru(E)(E')(CO)2(iPr-DAB) (E = Me, GePh3, SnPh3, E' = SnPh3; E = E' = PbPh3), were studied by spectroelectrochem. techniques. Reduction of the Cl complexes is a two-electron ECE process which directly affords the closed-shell five-**coordinate** anions [Ru(E')(CO)2(iPr-DAB)]- via transient radicals [Ru(E')(CO)2(iPr-DAB)]•. In the final step of the overall ECEC sequence at room temperature, the five-**coordinate** anions attack the parent complexes producing the dimers [Ru(E')(CO)2(iPr-DAB)]2. In contrast, the non-halide complexes are reversibly reduced to the radical anions [Ru(E)(E')(CO)2(iPr-DAB)]•- whose stability arises from the strength of the delocalized axial E-Ru-E' bond. Subsequent reduction of [Ru(E')(CO)2(iPr-DAB)]2 and [Ru(E)(E')(CO)2(iPr-DAB)]•- ultimately yields [Ru(E')(CO)2(iPr-DAB)]-. Reverse oxidation of the anions directly results in the recovery of the parent complexes Ru(Cl)(E')(CO)2(iPr-DAB) and Ru(E)(E')(CO)2(iPr-DAB). Two different, temperature-controlled mechanisms operate during the oxidation of the Cl complexes. The electronic and geometric structures of [Ru(E)(E')(CO)2(iPr-DAB)]•- (E, E' ≠ Cl) and [Ru(E')(CO)2(iPr-DAB)]- are discussed from their UV-visible, IR, NMR, EPR, and resonance Raman data.
IT **195311-51-4**
(formation and resonance Raman of)
RN 195311-51-4 HCAPLUS
CN Ruthenate(1-), dicarbonyl[N,N'-1,2-ethanediylidenebis[2-propanamine-κN]](triphenylstannyl)-, sodium (9CI) (CA INDEX NAME)



● Na^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 67, 72, 73, 77
IT **195311-51-4**
(formation and resonance Raman of)
REFERENCE COUNT: 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

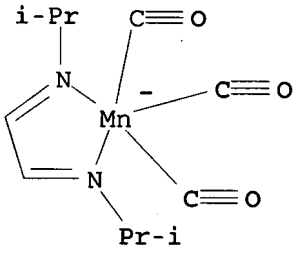
L27 ANSWER 15 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:619668 HCAPLUS
DOCUMENT NUMBER: 127:242361
TITLE: Electrochemical and IR/UV-vis Spectroelectrochemical Studies of fac-[Mn(X)(CO)3(iPr-DAB)]n (n = 0, X = Br, Me, Bz; n = +1, X = THF, MeCN, nPrCN, P(OMe)3; iPr-DAB = 1,4-Diisopropyl-1,4-diaza-1,3-butadiene) at Variable Temperatures: Relation between Electrochemical and Photochemical Generation of [Mn(CO)3(α-diimine)]-
AUTHOR(S): Rossenaar, Brenda D.; Hartl, Frantisek; Stufkens, Derk J.; Amatore, Christian; Maisonhaute, Emmanuel; Verpeaux, Jean-Noeel
CORPORATE SOURCE: Anorganisch Chemisch Laboratorium J. H. van't Hoff Research Instituut, Universiteit van Amsterdam, Amsterdam, 1018 WV, Neth.
SOURCE: Organometallics (**1997**), 16(21), 4675-4685
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 29 Sep 1997
AB [Mn(X)(CO)3(iPr-DAB)]n (n = 0, X = Br; n = +1, X = donor solvent, iPr-DAB = 1,4-diisopropyl-1,4-diaza-1,3-butadiene) undergo a two-electron reduction according to an ECE sequence. The chemical step (C) involves prompt dissociation of the X ligand from the primary 1-electron reduction product, followed by instantaneous 1-electron reduction of the five-**coordinate** transient [Mn(CO)3(iPr-DAB)]• producing [Mn(CO)3(iPr-DAB)]-. The latter complex remains rather stable at T < 190 K, whereas at higher temps. it undergoes an electron-transfer reaction with the parent complexes producing the dimer [Mn(CO)3(iPr-DAB)]2 (the second C step in the overall ECEC sequence). The rate of this reaction decreases in the order THF > MeCN > Br. The driving force for this behavior is the more pos. E1/2 value of the

redox couple [Mn(CO)3(iPr-DAB)]•/- relative to those of [Mn(Br)(CO)3(iPr-DAB)]0/•- and [Mn(X)(CO)3(iPr-DAB)]+/• (X = donor solvent) and a very short lifetime of the primary reduction products. In contrast, the ligand P(OMe)3 in [Mn{P(OMe)3}(CO)3(iPr-DAB)]• is bound rather firmly at low temps., where the ECE sequence to [Mn(CO)3(iPr-DAB)]- via [Mn(CO)3(iPr-DAB)]• is only a minor route. The reduction of [Mn(X)(CO)3(iPr-DAB)] (X = Me, PhCH2) at room temperature affords the five-**coordinate** anion [Mn(CO)3(iPr-DAB)]- via dissociation of X• from the 1-electron-reduced intermediate [Mn(X)(CO)3(iPr-DAB)]•- detectable by cyclic voltammetry for X = Me. Oxidation of the five-**coordinate** anion [Mn(CO)3(iPr-DAB)]- produces the dimer [Mn(CO)3(iPr-DAB)]2, following the reverse ECE(C) sequence involved in the reduction path. The direct dimerization of the radicals [primarily formed, Mn(CO)3(iPr-DAB)]•, is probably only a minor alternative route. In the presence of excess P(OMe)3, the principal oxidation product is [Mn{P(OMe)3}(CO)3(iPr-DAB)]+. The five-**coordinate** anions [Mn(CO)3(α-diimine)]- can be regarded as strongly π-delocalized complexes with the neg. charge equally distributed over the α-diimine and CO ligands. The intriguing mechanism of their photochem. formation from fac-[Mn(Br)(CO)3(α-diimine)] at low temps. was rectified from this spectroelectrochem. study.

IT **195311-42-3**
(mechanism of formation in electrochem. reduction or photoredn. of manganese α-diimine complex)

RN 195311-42-3 HCAPLUS

CN Manganate(1-), tricarbonyl[N,N'-1,2-ethanediylidenebis[2-propanamine-κN]]-, sodium (9CI) (CA INDEX NAME)



● Na^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 67, 72, 73

IT 90885-36-2 **195311-42-3**
(mechanism of formation in electrochem. reduction or photoredn. of manganese α-diimine complex)

REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

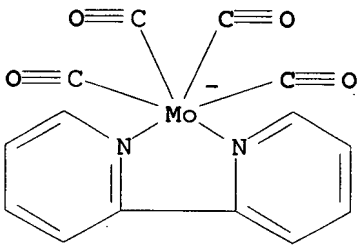
L27 ANSWER 16 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1997:428944 HCAPLUS
DOCUMENT NUMBER: 127:116675
TITLE: ESR spectra of reduced Mo(0) complexes
AUTHOR(S): Shinozaki, Kazuteru
CORPORATE SOURCE: Rigakubu, Yokohama City Univ., Yokohama, 236,

Japan
SOURCE: Yokohama-shiritsu Daigaku Ronso, Shizen Kagaku Keiretsu (1996), 47(1/2), 39-53
CODEN: YDRSAI; ISSN: 0911-7733
PUBLISHER: Yokohama-shiritsu Daigaku Gakujutsu Kenkyukai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
ED Entered STN: 10 Jul 1997

AB Molybdenum complexes having bipyridine (bpy), bipyrazine (bpz) and pyridylpyrazine (pypz), resp., as ligand were synthesized and the ESR spectra of the obtained compds. [Mo(CO4)(L)] and Na[Mo(CO4)(L)] (L = bpy, bpz, pypz) were measured and analyzed. The results, mainly of absorption bands, were discussed in view of an interaction between metal and ligands, such as metal to ligand charge transfer, (π, π*) or (n, π*) transition, localization of unpaired electron, etc.

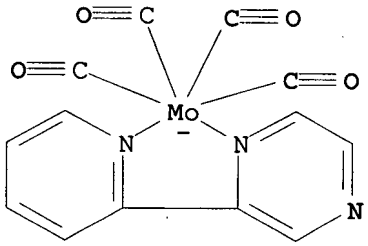
IT **36581-41-6 192524-67-7 192524-68-8**
(ESR spectra of reduced molybdenum complexes)

RN 36581-41-6 HCAPLUS
CN Molybdate(1-), (2,2'-bipyridine-κN1,κN1')tetracarbonyl-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

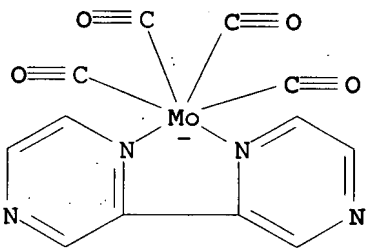
RN 192524-67-7 HCAPLUS
CN Molybdate(1-), tetracarbonyl[(2-pyridinyl-κN)pyrazine-κN1]-, sodium, (OC-6-33)- (9CI) (CA INDEX NAME)



● Na^+

RN 192524-68-8 HCAPLUS
CN Molybdate(1-), (2,2'-bipyrazine-κN1,κN1')tetracarbonyl-,

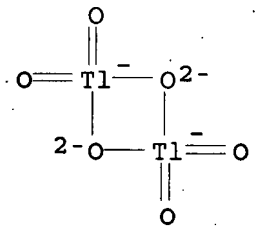
sodium, (OC-6-22)- (9CI) (CA INDEX NAME)

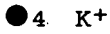


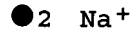
● Na^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 73
IT **Coordination** compounds
(ESR spectra of reduced molybdenum complexes)
IT **36581-41-6 192524-67-7 192524-68-8**
192524-69-9
(ESR spectra of reduced molybdenum complexes)

L27 ANSWER 17 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:472237 HCAPLUS
DOCUMENT NUMBER: 121:72237
TITLE: Oxidation of intermetallic phases: K4{Na2[Tl2O6]} from NaTl and K2O2
AUTHOR(S): Lulei, M.; Hoppe, R.
CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ., Giessen, Germany
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (**1994**), 620(5), 781-5
CODEN: ZAACAB; ISSN: 0044-2313
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 06 Aug 1994
AB K4{Na2[Tl2O6]} was prepared as transparent, yellow single crystals from NaTl and KO1.08 (molar ratio 1:1.3; sealed Ag-cylinder; 450°, 30 d). The structure determination (R = 5.75, Rw = 4.58%) confirms the space group P21/c with a 641.3, b 691.1, c 1188.5 pm, β 95.69° and Z = 2. As characteristic building units of the structure there are edge sharing double tetrahedra of isolated [Tl2O6] and [Na2O6]. The compound is isotypic with Cs6[In2O6] and Rb6[Tl2O6]. The Madelung part of lattice energy, the mean fictive ionic radii, effective **coordination** nos., and charge distribution are calculated
IT **156395-82-3P**, Potassium sodium thallium oxide (K4Na2Tl2O6)
(preparation and crystal structure and Madelung crystal lattice energy of)
RN 156395-82-3 HCAPLUS
CN Thallate (Tl2O66-), tetrapotassium disodium (9CI) (CA INDEX NAME)

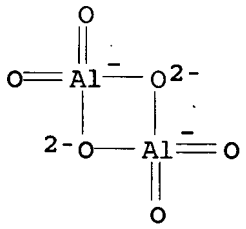






CC 78-2 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **156395-82-3P**, Potassium sodium thallium oxide (K4Na2Tl2O6)
(preparation and crystal structure and Madelung crystal lattice energy of)

L27 ANSWER 18 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1994:472234 HCAPLUS
DOCUMENT NUMBER: 121:72234
TITLE: Preparation and crystal structure of K6[Al2O6] and Rb6[Al2O6]
AUTHOR(S): Schlaeger, M.; Hoppe, R.
CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ., Giessen, Germany
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (**1994**), 620(5), 882-7
CODEN: ZAACAB; ISSN: 0044-2313
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 06 Aug 1994
AB Colorless single crystals of K6[Al2O6] prepared from intimate mixts. of KAlO2 and K2O (550°, 90 d). The structure determination (R = 2.2, Rw = 2.1%) confirms the space group C2/m with Z = 2, a 698.25, b 1103.54, c 646.49 pm, β 102.49°. Colorless single crystals of hitherto unknown Rb6[Al2O6] were prepared from intimate mixts. of RbAlO2 and Rb2O (520°, 120 d). The structure determination results in the residual values R = 7.2, Rw = 4.9%, space group C2/m, a 725.92, b 1143.33, c 678.06 pm, β 104.05°, Z = 2. K6[Al2O6] and Rb6[Al2O6] are isostructural with K6[Fe2O6]. A characteristic structure unit is [Al2O6]6- consisting of 2 edge-sharing [AlO4] tetrahedra. Effective **coordination** nos., mean fictive ionic radii, the Madelung part of lattice energy and the charge distribution are calculated and discussed.
IT **156429-70-8P**
(preparation and crystal structure and Madelung crystal lattice energy of)
RN 156429-70-8 HCAPLUS
CN Aluminate (Al2O66-), hexapotassium (9CI) (CA INDEX NAME)



●6 K+

CC 78-2 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **156429-70-8P** 156429-71-9P
(preparation and crystal structure and Madelung crystal lattice energy of)

L27 ANSWER 19 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1993:159846 HCAPLUS
DOCUMENT NUMBER: 118:159846
TITLE: Polyoxo alkoxide clusters of vanadium: structural characterization of the decavanadate core in the "fully reduced" vanadium(IV) species [V10O16{(OCH2)3CCH2CH3}4]4- and [V10O14(OH)2{(OCH2)3CCH2OH}4]2- and in the mixed-valence clusters [VIV8VV2O16{(OCH2)3CR}4]2- (R = -CH2CH3, -CH3)
AUTHOR(S): Khan, M. Ishaque; Chen, Qin; Goshorn, D. P.; Zubieta, Jon
CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244-4100, USA
SOURCE: Inorganic Chemistry (**1993**), 32(5), 672-80
CODEN: INOCAJ; ISSN: 0020-1669
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 13 Apr 1993
AB The hydrothermal reaction of a mixture of vanadium oxides with (HOCH2)3CCH2OH in the presence of Me3NHCl yields the reduced species (Me3NH)2[VIV10O14(OH)2{(OCH2)CCH2OH}4].2H2O (1). In contrast, the reactions of vanadium oxides with (HOCH2)3CR3, using NaCl, KCl, or Bu4NCl as mineralizers, yield the mixed-valence species M2[VIV8VV2O16{(OCH2)3CR}4].nH2O (M = Na, n = 0, R = Et (2); M = K, n = 2, R = Et (3); M = Bu4N, n = 0, R = Me (4)). These compds. exhibit structures based on the decavanadate core {V10O28}, with ten doubly-bridging and two triply-bridging oxo groups of this parent structure replaced by the alkoxy donors of the ligands. The structural consequences of protonation of the core in 1 and of oxidation of two vanadium centers in 2-4 are presented. The crystal packing patterns of anion clusters and **cations** in these species reveal the common structural motif of anion stacking to produce polar and nonpolar channels. The influence of the **cation** on the details of the extended structure is apparent in the crystal packing descriptions. Crystal data were determined for 1 and 2 in monoclinic space group P21/c, for 3.2H2O in triclinic space group P.hivin.1 and for 4 in monoclinic space group, P21/n.

IT **146622-15-3P**
(prepn and spin coupling and crystal structure of)
RN 146622-15-3 HCAPLUS
CN Vanadate(2-), bis[μ3-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ4-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-μ-oxodi-μ3-oxodi-μ6-oxooctaoxodeca-, disodium (9CI) (CA INDEX NAME)

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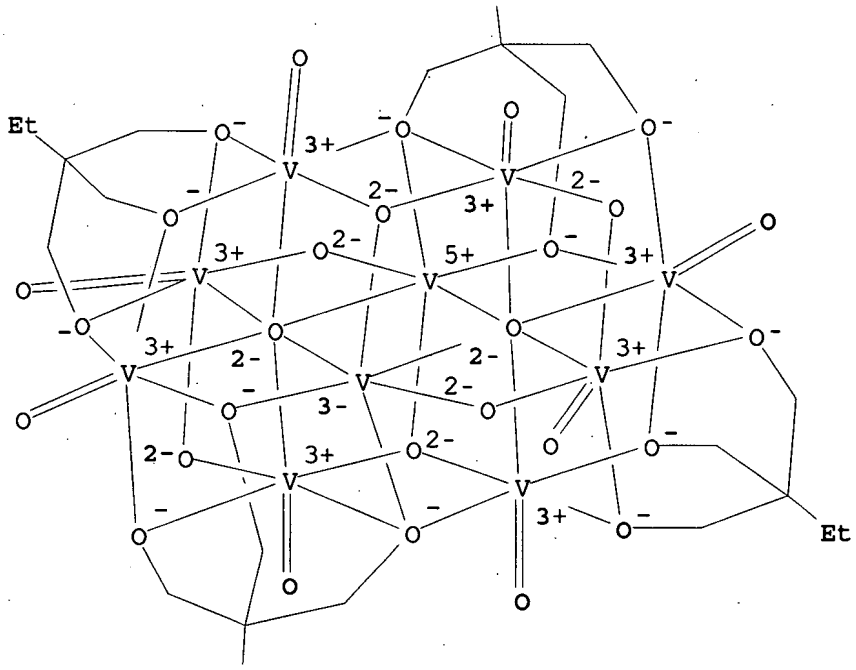


PAGE 3-A

● 2 Na^+

IT **146622-19-7P**
(preparation and crystal structure and electrochem. oxidation and reaction of, with fluoroboric acid)

RN 146622-19-7 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, bis[μ3-[2-(hydroxymethyl)-2-methyl-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ4-[2-(hydroxymethyl)-2-methyl-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-μ-oxodi-μ3-oxodi-μ6-oxooctaoxodecavanadate(2-) (2:1) (9CI) (CA INDEX NAME)

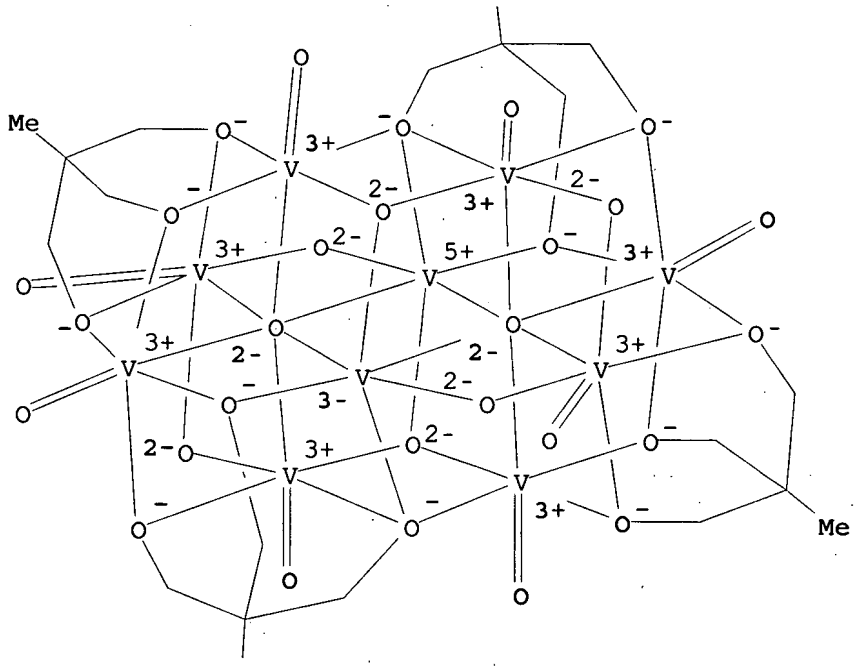
CM 1

CRN 146622-18-6
CMF C20 H36 O28 V10
CCI CCS

PAGE 1-A

Me

PAGE 2-A

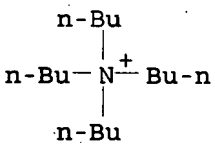


PAGE 3-A

Me

CM 2

CRN 10549-76-5
CMF C16 H36 N

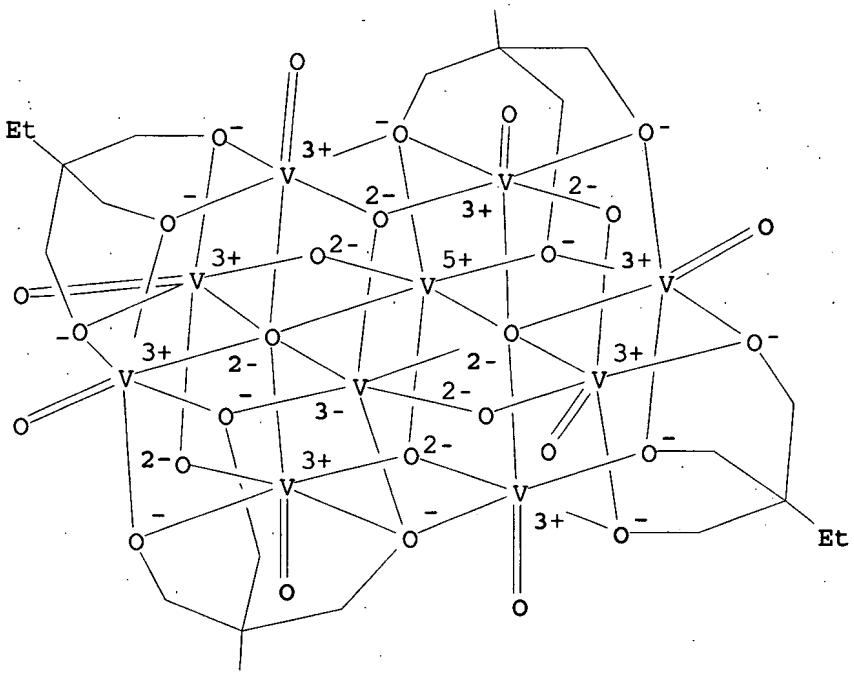


IT **146622-16-4P**
(preparation and crystal structure of)
RN 146622-16-4 HCAPLUS
CN Vanadate(2-), bis[μ3-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ4-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-μ-oxodi-μ3-oxodi-μ6-oxooctaoxodeca-, dipotassium, dihydrate (9CI) (CA INDEX NAME)

PAGE 1-A

Et

PAGE 2-A



PAGE 3-A

CC 78-7 (Inorganic Chemicals and Reactions)
IT **146622-15-3P** 146622-22-2P
(prepn and spin coupling and crystal structure of)
IT **146622-19-7P**
(preparation and crystal structure and electrochem. oxidation and reaction of, with fluoroboric acid)
IT **146622-16-4P**
(preparation and crystal structure of)

L27 ANSWER 20 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1992:419144 HCAPLUS
DOCUMENT NUMBER: 117:19144
TITLE: **Coordination** compounds of polyoxovanadates with a hexametalate core. Chemical and structural characterization of [VV6O13[(OCH2)3CR]2]2-, [VV6O11(OH)2[(OCH2)3CR]2],

[VIV4VV2O9(OH)4[(OCH2)3CR]2]2-, and
[VIV6O7(OH)6](OCH2)3CR]2]2-

AUTHOR(S): Chen, Qin; Goshorn, David P.; Scholes, Charles P.; Tan, Xiao Ling; Zubieta, Jon
CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244, USA
SOURCE: Journal of the American Chemical Society (**1992**), 114(12), 4667-81
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 11 Jul 1992
AB Reactions of (HOCH2)3CR (R = NO2, CH2OH, Me) with [Bu4N]3[H3V10O28] in MeCN yield [Bu4N]2[V6O13{(OCH2)3CR}2] (I). Complexes of this general class are electrochem. active, displaying a reversible 1-electron reduction at -0.67-(1.20) V, relative to the ferrocene/ferrocenium couple. The reduced species [VIVV5VO13{(OCH2)3CNO2}2]3- exhibits an 8-line EPR spectrum at 4.2 K, centered at g ≈ 1.95. Broadening of EPR spectral features as the temperature is raised from 4.2 to 83 K is evidence for increased motion of the unpaired electron consistent with thermally induced electron transfer between VIV and VV states. Chemical redns. of I (R = Me) with organohydrazines yield reduced, hydroxy-bridged [Bu4N]2[VIV4VV2O9(OH)4{(OCH2)3CMe}2] (II) and [Bu4N]2[VIV6O7(OH)6{(OCH2)3CMe}2].2CH2Cl2.0.5PhNNPh (III). The protonation sites were established by x-ray crystallog. Protonation and reduction can be decoupled such that reaction of I (R = Me) with HBF4.OEt2 yields diprotonated [V6O11(OH)2{CH3C(CH2O)3}2] (IV) wherein the site of protonation was established by x-ray crystallog. as 2 of the bridging oxo groups. Crystal data are as follows: I (R = NO2); triclinic space group P1; Z = 1, R = 0.049, Rw = 0.062; I.DMF (R = CH2OH); monoclinic, space group P21/c, Z = 2, R = 0.054, Rw = 0.060; I (R = CH3); triclinic space group, P.hivin.1, Z = 1, R = 0.055, Rw = 0.059; IV.2DMF.Et2O; triclinic space group, P.hivin.1, Z = 1, R = 0.043, Rw = 0.049; II; triclinic space group P.hivin.1, Z = 1, R = 0.043, Rw = 0.045; III.2CH2Cl2.0.5PhNNPh; triclinic space group P.hivin.1, Z = 2, R = 0.042, Rw = 0.049.

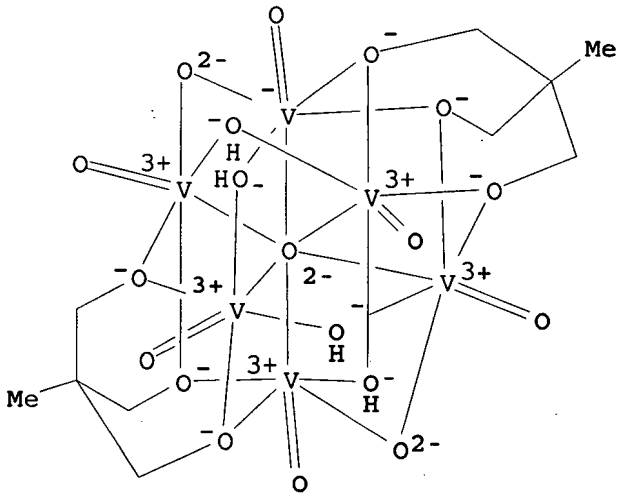
IT **141438-82-6P**
(preparation and crystal structure and IR spectrum and magnetic susceptibility and oxidation potential of)

RN 141438-82-6 HCAPLUS

CN 1-Butanaminium, N,N,N-tributyl-, tetra-μ-hydroxybis[μ3-[2-(hydroxymethyl)-2-methyl-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]di-μ-oxo-μ6-oxohexaoxohexavanadate(2-) (2:1) (9CI) (CA INDEX NAME)

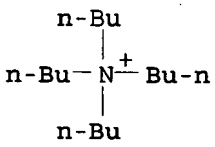
CM 1

CRN 141438-81-5
CMF C10 H22 O19 V6
CCI CCS



CM 2

CRN 10549-76-5
CMF C16 H36 N



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **141438-82-6P**
(preparation and crystal structure and IR spectrum and magnetic susceptibility and oxidation potential of)

L27 ANSWER 21 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1992:247279 HCAPLUS
DOCUMENT NUMBER: 116:247279
TITLE: Synthesis and crystal and molecular structure of (NH4)4[V10O16{EtC(CH2O)3}4]·4H2O, a decavanadyl cluster
AUTHOR(S): Khan, M. Ishaque; Chen, Qin; Zubieta, Jon
CORPORATE SOURCE: Dep. Chem., Syracuse Univ., Syracuse, NY, 13244, USA
SOURCE: Journal of the Chemical Society, Chemical Communications (**1992**), (4), 305-6
CODEN: JCCCAT; ISSN: 0022-4936
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 13 Jun 1992
AB The hydrothermal reaction of (NH4)VO3 with EtC(CH2OH)3 yields the oxoalkoxovanadium(IV) cluster, (NH4)4[V10O16{EtC(CH2O)3}4].4H2O, an unusual polyoxoanion **coordination** complex with a reduced {V10O28} core. Results of an x-ray crystallog. study are summarized.
IT **139942-83-9P**

(preparation and crystal structure of)
RN 139942-83-9 HCAPLUS
CN Vanadate(4-), bis[μ3-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1,O2:O1,O3:O2,O3]]bis[μ4-[2-ethyl-2-(hydroxymethyl)-1,3-propanediolato(3-)-O1:O1,O2:O1,O3:O2,O3]]tetra-μ-oxodi-μ3-oxodi-μ6-oxooctaoxodeca-, tetraammonium, tetrahydrate (9CI) (CA INDEX NAME)

PAGE 1-A

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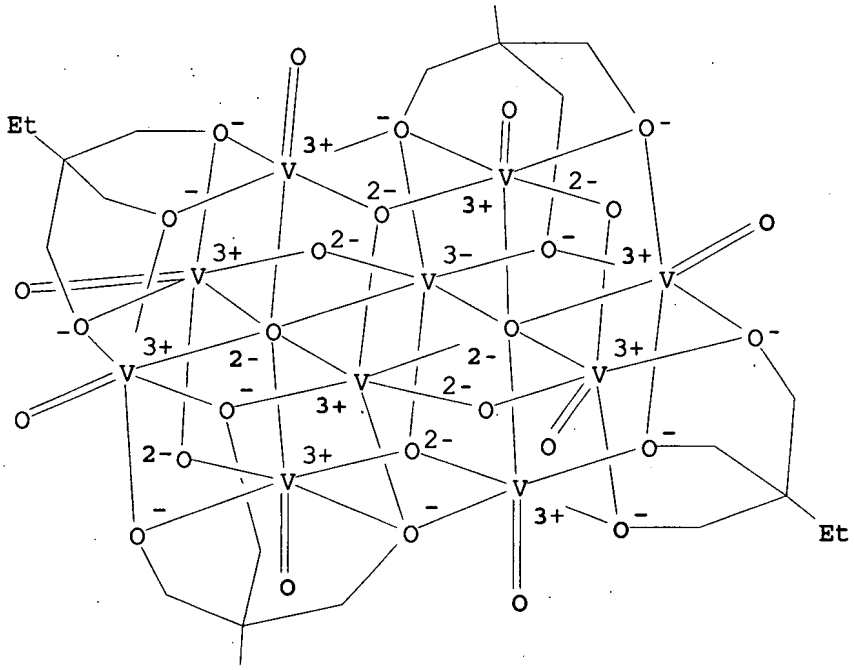


PAGE 3-A

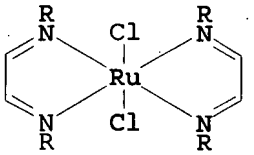
● 4 NH_4^+

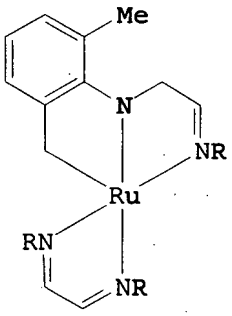
● 4 H_2O

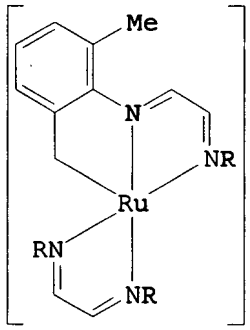
CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **139942-83-9P**
(preparation and crystal structure of)

L27 ANSWER 22 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1991:680212 HCAPLUS
DOCUMENT NUMBER: 115:280212
TITLE: Ruthenium diazadiene complexes. XIII. Bis(diazadiene)ruthenium: isomerization, hydrogenation, metalation. Structure of [K(TMEDA)2][(DAD)Ru(DADH)]
AUTHOR(S): Rosenberger, Volker; Fendesak, Gert; Tom Dieck, Heindirk

CORPORATE SOURCE: Inst. Anorg. Angew. Chem., Univ. Hamburg, Hamburg, W-2000/13, Germany
SOURCE: Journal of Organometallic Chemistry (1991), 411(3), 445-56
CODEN: JORCAI; ISSN: 0022-328X
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 27 Dec 1991
GI


I


III

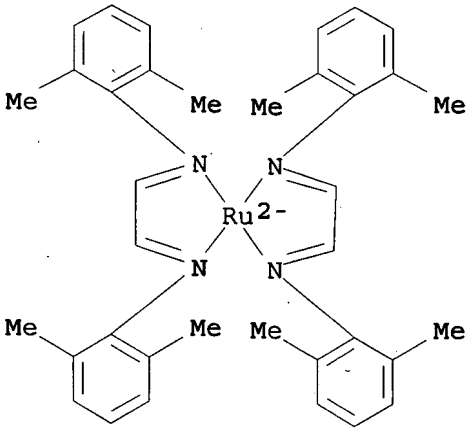

IV

AB Bis(diazadiene)dichlororuthenium (R-DAD)2RuCl2 (I) (R-DAD = RN:CHCH:NR with R = 2,6-xylyl) reacts with 2 mol of potassium in THF to give the unsatd. (R-DAD)2Ru (II) and its isomer (III), in which one of the o-Me groups of R is metalated. The hydrogen is transferred to the neighboring imine carbon of the DAD to form an iminaminato type ligand, N:CHCH2N. Reduction of I in the presence of hydrogen or addition of hydrogen to II affords a hydride with one Ru-H bond and one iminaminato ligand. The addition is reversible and at higher temps. II and III are formed again. Reduction of I with 3-4 mol of potassium gives a reduction product of composition K2[Ru(R-DAD)2] and a deprotonation product (IV). A single crystal x-ray diffraction study was performed for IV. The **coordination** of the Ru0 center is intermediate between square pyramidal and trigonal bipyramidal with four imine N donors and a carbon ligand, resulting from the o-Me metalation of one R-DAD. [K(tmeda)2]+ is the counterion. The potassium ion being insufficiently saturated by the tmeda ligands has further contacts with some of the carbon atoms of the o-Me metalated aromatic ring.

IT **136167-70-9P**
(preparation of)

RN 136167-70-9 HCAPLUS

CN Ruthenate(2-), bis[N,N'-1,2-ethanediylidenebis[2,6-dimethylbenzenamine]-N,N']-, dipotassium, (T-4)- (9CI) (CA INDEX NAME)



●2 K+

CC 29-13 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 75
IT 123594-67-2P 136167-68-5P 136167-69-6P **136167-70-9P**
136167-71-0P
(preparation of)

L27 ANSWER 23 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1991:6718 HCAPLUS
DOCUMENT NUMBER: 114:6718
TITLE: The 1,4- and 2,3-diazadiene complexes of vanadium carbonyl. Their 51V NMR properties, and the crystal structure of cis-[η5-C5Me5V(CO)2Me2CHN:CHCH:NCHMe2]
AUTHOR(S): Woitha, Claus; Behrens, Ulrich; Vergopoulos, Vassilios; Rehder, Dieter
CORPORATE SOURCE: Inst. Anorg. Angewandte Chem., Univ. Hamburg, Hamburg, D-2000/13, Germany
SOURCE: Journal of Organometallic Chemistry (**1990**), 393(1), 97-109
CODEN: JORCAI; ISSN: 0022-328X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 114:6718
ED Entered STN: 12 Jan 1991
AB The reaction between Cp'V(CO)3THF (Cp' = C5H5, C5H4SiMe3, C5Me5) or [Et4N][V(CO)5THF] and diazadienes [RN:CHCH:NR (dad), R'HC:NN:CHR' (azine); L] at low temperature yields the complexes cis-[Cp'V(CO)2L] (R = Me2CH, Me3C, n-C5H11, Ph, 4-MeOC6H4; R' = p-Tol, 4-HOC6H4, 4-MeOC6H4) or cis-[Et4N][V(CO)4L] (R = p-Tol, 4-MeOC6H4, R' = Ph). In some cases (R = n-C5H11, Me2CH; R' = Ph), direct irradiation of C5Me5V(CO)4 in the presence of L leads to the same complexes. With R' = Me, the mono-substituted complexes Cp'V(CO)3L or [Et4N][V(CO5L] are formed. The δ(51V) values of cis-[Cp'V(CO)2L] (-346 to -498 ppm for L = dad, -300 to -393 ppm for L = azine; relative to VOCl3) indicate that the ligands are comparable in overall ligand strength to amines. The crystal structure has been determined for the title compound (I). The dad ligand in I forms a chelate-5 ring [d(VN) = 206.7(2) pm] in the

envelope conformation and exhibits partial enediamine **coordination** [d(CC) = 137.2(7) ppm]. Structure information has also been obtained for cis-[C5Me5V(CO)2PhHC:NN:CHPh] (II): benzaldazine in II is **coordinated** in the η2-(NN) mode (perpendicular to the mirror plane of the mol.) with d(VN) = 201.9(5) and d(NN) = 140.0(12) pm.

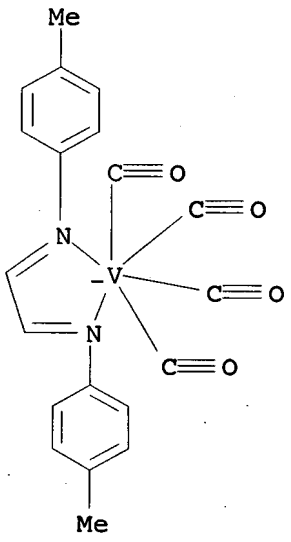
IT **130565-12-7P 130565-14-9P**
(preparation and spectra of)

RN 130565-12-7 HCAPLUS

CN Ethanaminium, N,N,N-triethyl-, (OC-6-22)-tetracarbonyl[N,N'-1,2-ethanediylidenebis[4-methylbenzenamine]-N,N']vanadate(1-) (9CI) (CA INDEX NAME)

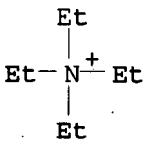
CM 1

CRN 130565-11-6
CMF C20 H16 N2 O4 V
CCI CCS



CM 2

CRN 66-40-0
CMF C8 H20 N

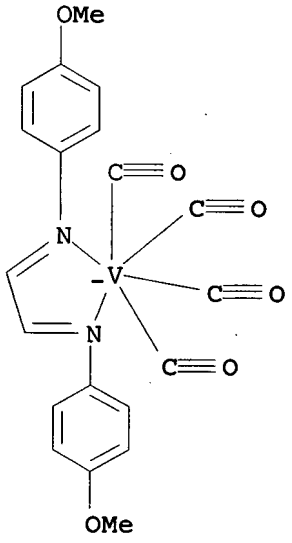


RN 130565-14-9 HCAPLUS

CN Ethanaminium, N,N,N-triethyl-, (OC-6-22)-tetracarbonyl[N,N'-1,2-ethanediylidenebis[4-methoxybenzenamine]-N,N']vanadate(1-) (9CI) (CA INDEX NAME)

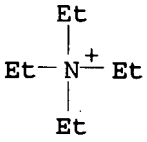
CM 1

CRN 130565-13-8
CMF C20 H16 N2 O6 V
CCI CCS



CM 2

CRN 66-40-0
CMF C8 H20 N



CC 29-10 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 22, 75
IT 130564-99-7P 130565-00-3P 130565-01-4P 130565-02-5P
130565-03-6P 130565-04-7P 130565-05-8P 130565-07-0P
130565-08-1P 130565-10-5P **130565-12-7P**
130565-14-9P 130565-15-0P 130595-14-1P 130595-15-2P
130691-40-6P 130691-41-7P 130691-42-8P 130691-44-0P
130691-45-1P 130691-46-2P 130691-48-4P 130712-47-9P
130712-48-0P 130712-49-1P
(preparation and spectra of)

L27 ANSWER 24 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:603761 HCAPLUS
DOCUMENT NUMBER: 113:203761
TITLE: Synthesis and crystal structure of hexa(tetramethylammonium) potassiovanadate ([(CH3)4N]6[KV15O36])
AUTHOR(S): Zhou, Kangjing; Li, Xioaping

CORPORATE SOURCE: Fujian Inst. Res. Struct. Matter, Acad. Sin., Fuzhou, Peop. Rep. China
SOURCE: Zeitschrift fuer Kristallographie (**1990**), 190(1-2), 97-101
CODEN: ZEKRDZ; ISSN: 0044-2968
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 23 Nov 1990
AB K2VO(NCS)4 reacted with serine and aspartic acid and subsequently with Me4NCl and KOH to form (Me4N)6KV15O36. The crystals are hexagonal, space group P63/mmc, a 13.852(2), c 20.107(7) Å, Z = 2, and RW = 0.064. KV15O366- is nearly spherical, having D3h symmetry. Each V atom is **coordinated** by 5 O atoms to form a tetragonal pyramid. Fifteen pyramids are connected to each other via corners or edges of the basal planes. A large cavity in the center is .apprx.4 Å in free diameter The K+ is in the center of the cavity. The distances between K+ and 21 O atoms located in the interior surface of the cavity are 3.33-3.87 Å and the distances between K+ and 15 V atoms are 3.32-3.53 Å. Six Me4N+ around the anion form a trigonal prism.
IT **130218-89-2P**
(preparation and crystal structure of)
RN 130218-89-2 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, potassium tri-μ-oxooctadeca-μ3-oxopentadecaoxopentadecavanadate(7-) (6:1:1) (9CI) (CA INDEX NAME)

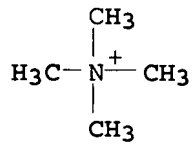
CM 1

CRN 130218-88-1
CMF O36 V15
CCI CCS

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 51-92-3
CMF C4 H12 N



CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **130218-89-2P**
(preparation and crystal structure of)

L27 ANSWER 25 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:525188 HCAPLUS
DOCUMENT NUMBER: 113:125188
TITLE: Topologically interesting cages for negative ions with extremely high **coordination** numbers: an unusual property of vanadium-oxygen clusters
AUTHOR(S): Mueller, Achim; Penk, Michael; Rohlfing, Ralf;

Krickemeyer, Erich; Doering, Joachim
CORPORATE SOURCE: Fak. Chem., Univ. Bielefeld, Bielefeld, D-4800/1, Germany
SOURCE: Angewandte Chemie (1990), 102(8), 927-9
CODEN: ANCEAD; ISSN: 0044-8249
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 29 Sep 1990
AB Cs9[H4V18O42X].12H2O (X = Br, Cl), (NMe4)6[V15O36X].4H2O, Li7[V15O36(CO3)].nH2O and K9[H4V18O42X1].16H2O (X1 = X, I) were prepared and characterized by x-ray crystallog. The Cs compds. crystallized in space group C2/c, the K compds. in P.hivin.1, NMe4+ compound in P63/mmc and the Li compound in P21/m. The V-O cage structures enclose a X1 or carbonate anion.
IT **110550-46-4P 128134-48-5P**
(preparation and crystal structure of)
RN 110550-46-4 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, μ6-chlorotri-μ-oxooctadeca-μ3-oxopentadecaoxopentadecavanadate(6-) (6:1), tetrahydrate (9CI) (CA INDEX NAME)

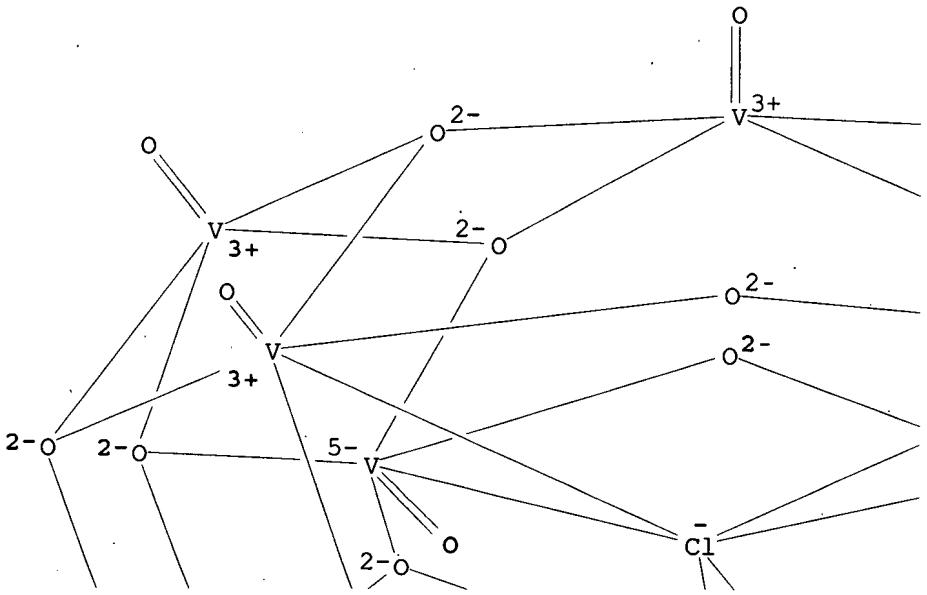
CM 1

CRN 110550-45-3
CMF C4 H12 N . 1/6 Cl O36 V15

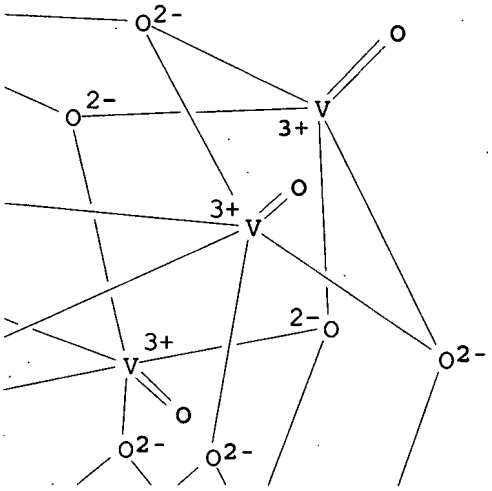
CM 2

CRN 441286-66-4
CMF Cl O36 V15
CCI CCS

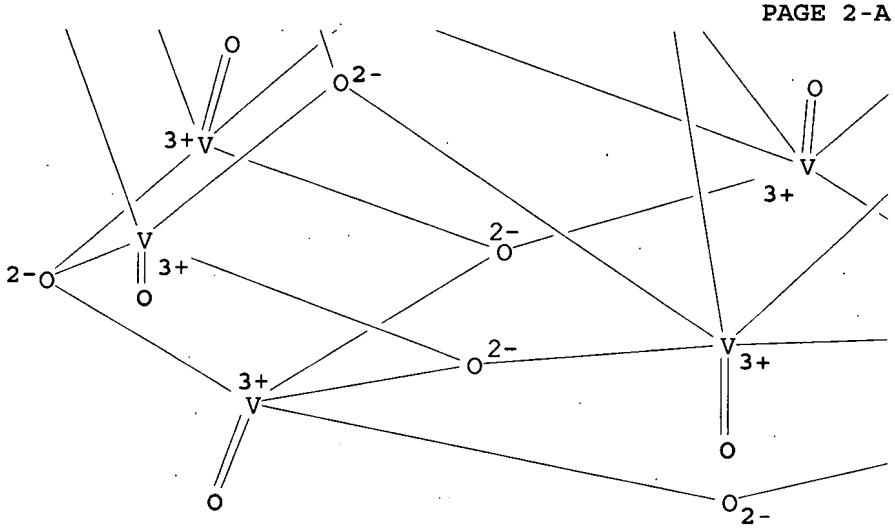
PAGE 1-A



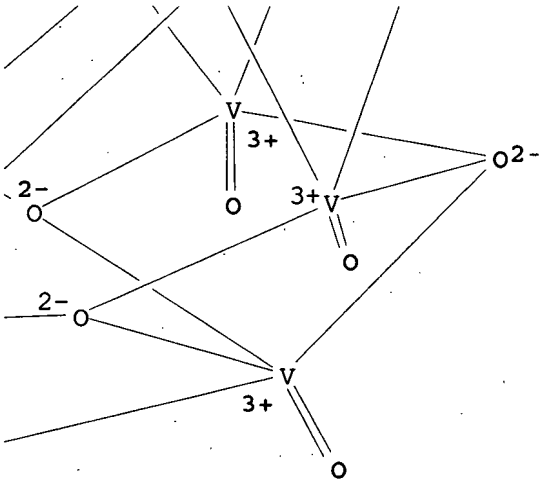
PAGE 1-B



PAGE 2-A

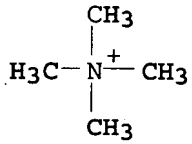


PAGE 2-B



CM 3

CRN 51-92-3
CMF C4 H12 N



RN 128134-48-5 HCAPLUS
CN Methanaminium, N,N,N-trimethyl-, bromide tri-μ-oxooctadeca-μ3-oxopentadecaoxopentavanadate(5-) (6:1:1), tetrahydrate (9CI) (CA INDEX NAME)

CM 1

CRN 128134-47-4
CMF C4 H12 N . 1/6 Br O36 V15

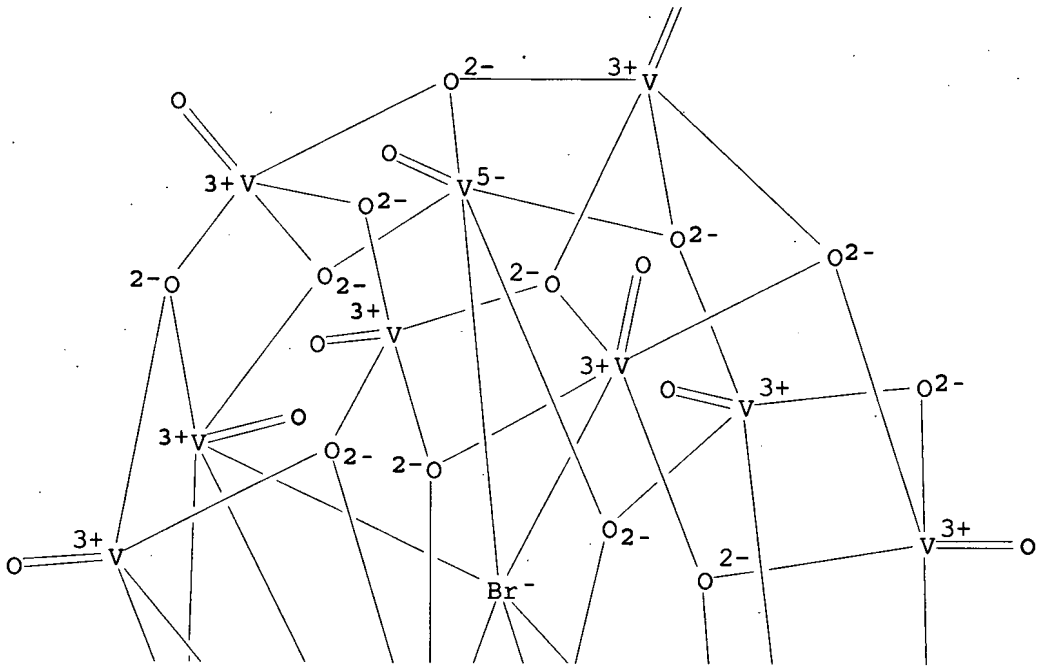
CM 2

CRN 256486-89-2
CMF Br O36 V15
CCI CCS

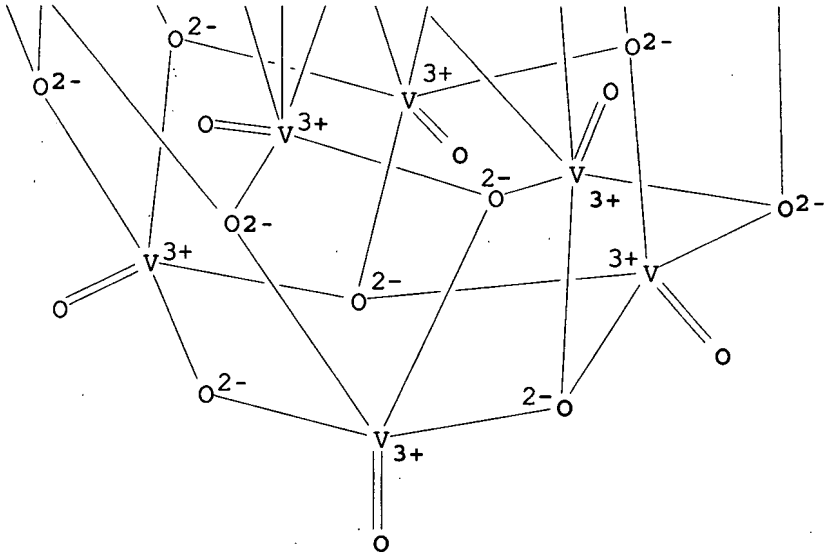
PAGE 1-A

O

PAGE 2-A

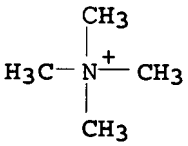


PAGE 3-A



CM 3

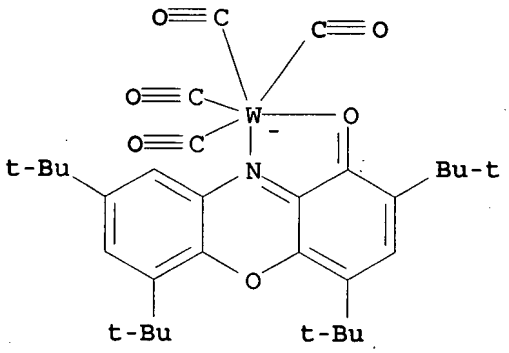
CRN 51-92-3
CMF C4 H12 N



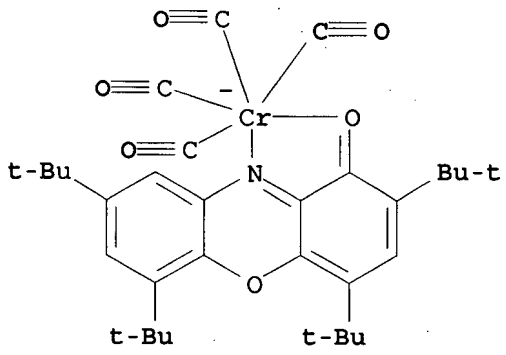
CC 78-3 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **110550-46-4P 128134-48-5P** 128164-17-0P
128164-18-1P 128164-19-2P 128164-20-5P 128190-37-4P
128302-18-1P
(preparation and crystal structure of)

L27 ANSWER 26 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1990:451363 HCAPLUS
DOCUMENT NUMBER: 113:51363
TITLE: **Coordination** and organometallic compounds based on the stable 1-hydroxy-2,4,6,8-tetrakis(tert-butyl)phenoxazin-10-yl radical
AUTHOR(S): Karsanov, I. V.; Ivakhnenko, E. P.; Khandkarova, V. S.; Prokof'ev, A. I.; Rubezhov, A. Z.; Kabachnik, M. I.
CORPORATE SOURCE: A. N. Nesmeyanov Inst. Organoelem. Compd., Moscow, USSR
SOURCE: Journal of Organometallic Chemistry (**1989**), 379(1-2), 1-25
CODEN: JORCAI; ISSN: 0022-328X
DOCUMENT TYPE: Journal

LANGUAGE: English
ED Entered STN: 03 Aug 1990
AB A new method for the preparation of a stable 1-hydroxy-2,4,6,8-tetrakis(tert-butyl)phenoxazin-10-yl radical by oxidation of 3,5-di-tert-butyl-o-aminophenol with 3,5-di-tert-butyl-o-benzoquinone is reported. Interaction of the radical with the **coordination** or the organic compds. of various metals has been studied.
IT **112813-08-8**
(formation and ESR and reactions of)
RN 112813-08-8 HCAPLUS
CN Tungstate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)

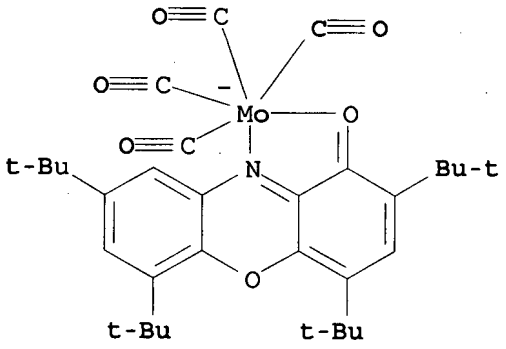


IT **112813-03-3 112813-05-5**
(formation and ESR and reactions of, with tri-Bu phosphite or phenoxazinone)
RN 112813-03-3 HCAPLUS
CN Chromate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



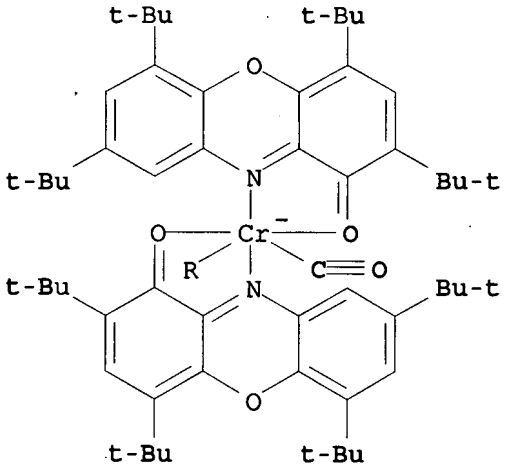
● K^+

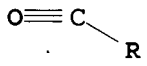
RN 112813-05-5 HCAPLUS
CN Molybdate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



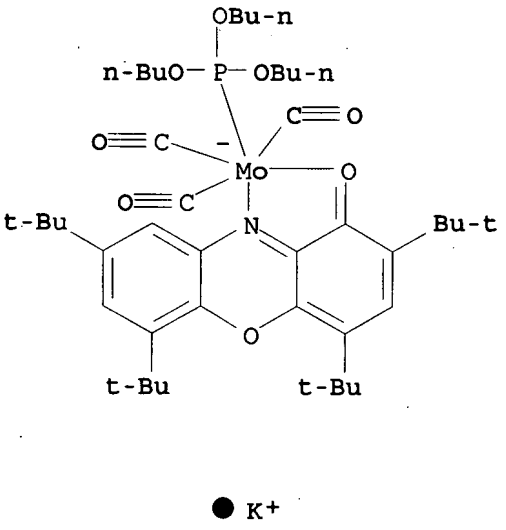
● K^+

IT **127899-00-7 127900-04-3 127900-05-4 127900-06-5 127925-33-1**
(formation and ESR of)
RN 127899-00-7 HCAPLUS
CN Chromate(1-), dicarbonylbis[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium (9CI) (CA INDEX NAME)

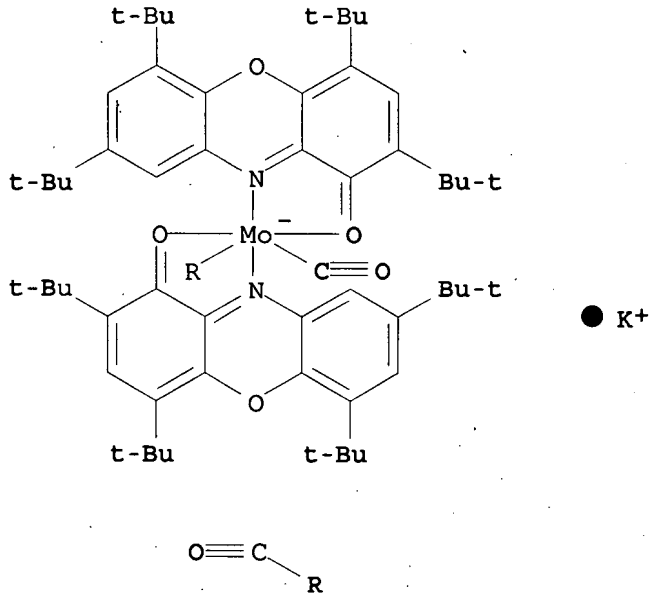




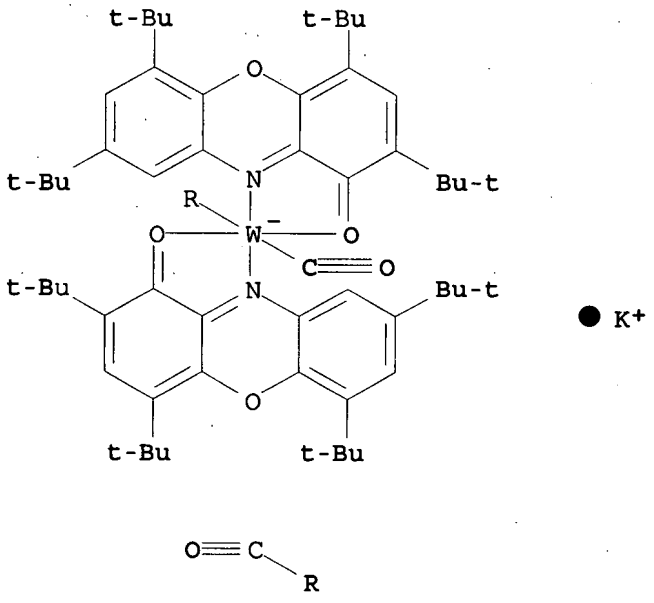
RN 127900-04-3 HCAPLUS
CN Molybdate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](tributyl phosphite-P)-, potassium, (OC-6-44)-(9CI) (CA INDEX NAME)



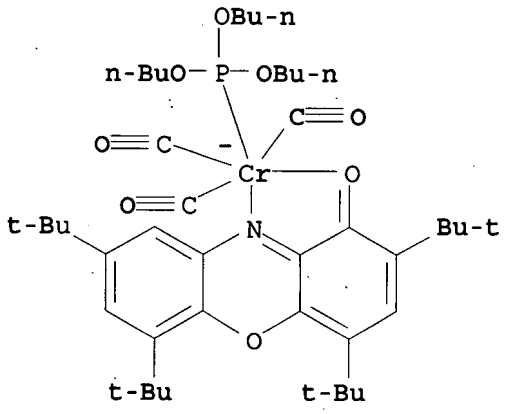
RN 127900-05-4 HCAPLUS
CN Molybdate(1-), dicarbonylbis[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium (9CI) (CA INDEX NAME)



RN 127900-06-5 HCAPLUS
CN Tungstate(1-), dicarbonylbis[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium (9CI) (CA INDEX NAME)



RN 127925-33-1 HCAPLUS
CN Chromate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](tributyl phosphite-P)-, potassium, (OC-6-44)-(9CI) (CA INDEX NAME)

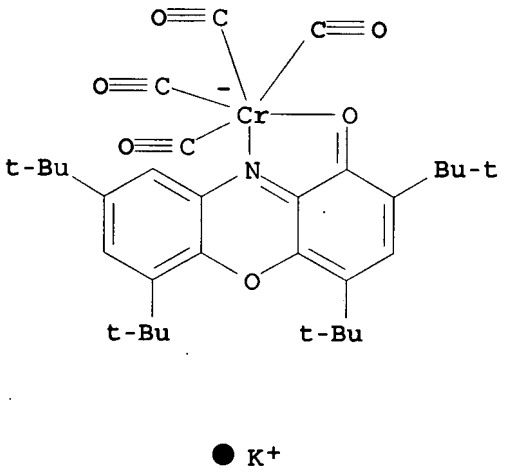


● K^+

CC 78-7 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 28, 29
IT **112813-08-8**
(formation and ESR and reactions of)
IT **112813-03-3 112813-05-5**
(formation and ESR and reactions of, with tri-Bu phosphite or phenoxazinone)
IT 109-99-9D, chromium carbonyl complexes with phenoxazine derivative radicals 7440-47-3D, Chromium, complexes with carbonyl and phenoxazine derivative radicals and THF 12090-11-8D, reaction products with phenoxazine radicals 20319-35-1D, reaction products with π-complexes of osmium and rhodium and ruthenium 37366-09-9D, reaction products with phenoxazine radicals 53886-39-8D, reaction products with phenoxazine radicals 55429-04-4D, chromium THF carbonyl complexes 109145-40-6 109145-42-8 109145-44-0 109145-45-1 109145-47-3 109776-22-9 111932-02-6 111932-03-7 111932-04-8 112365-15-8 112365-17-0 112365-18-1 112365-20-5 112365-24-9 127829-16-7 127829-24-7 127829-25-8 127829-26-9 127829-26-9D, reaction products with π-complexes of osmium and rhodium and ruthenium 127829-27-0 127829-29-2 127829-30-5 127859-02-3 **127899-00-7** 127899-04-1 **127900-04-3** **127900-05-4** **127900-06-5** 127925-32-0 **127925-33-1**
(formation and ESR of)

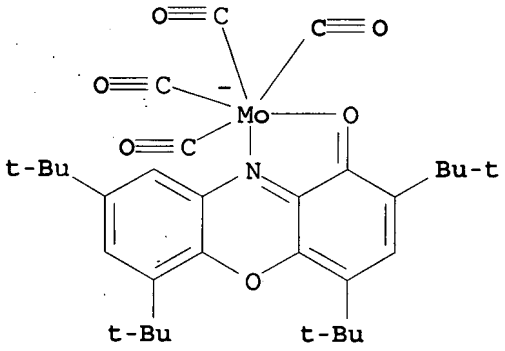
L27 ANSWER 27 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1988:86781 HCAPLUS
DOCUMENT NUMBER: 108:86781
TITLE: ESR spectra of ion-radical complexes of chromium and molybdenum with the 1-H-1-oxo-2,4,6,8-tetrakis(tert-butyl)phenoxazyl ligand
AUTHOR(S): Solodovnikov, S. P.; Karsanov, I. V.; Prokof'ev, A. I.; Bubnov, N. N.; Kabachnik, M. I.
CORPORATE SOURCE: Inst. Elementoorg. Soedin. im. Nesmeyanova, Moscow, USSR
SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (**1987**), (10), 2171-8
CODEN: IASKA6; ISSN: 0002-3353

DOCUMENT TYPE: Journal
LANGUAGE: Russian
ED Entered STN: 05 Mar 1988
AB Cr, Mo and W complexes with 1-H-1-oxo-2,4,6,8-tetrakis(tert-butyl)phenoxazyl (L•-) were prepared from the Group VIB carbonyls and the corresponding phenoxazine with UV irradiation or KL. In the Cr complexes the ligand is in the anion radical form whereas in the Mo complexes it is in the dianion form. The stepwise mechanism of the addition of KL to the Group VIB carbonyls is discussed. In these complexes L is bidentate, **coordinating** through the N and oxyl O atoms.
IT **112813-03-3P 112813-05-5P**
(formation and ESR and reaction of, with triphenylphosphine oxide)
RN 112813-03-3 HCAPLUS
CN Chromate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)

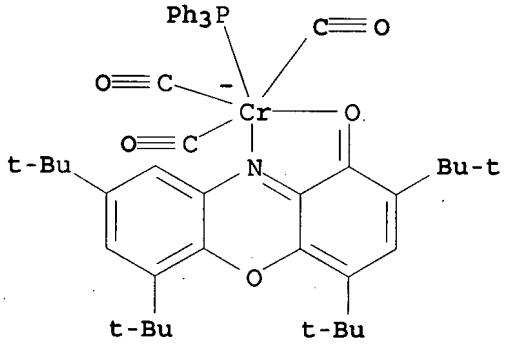


● K^+

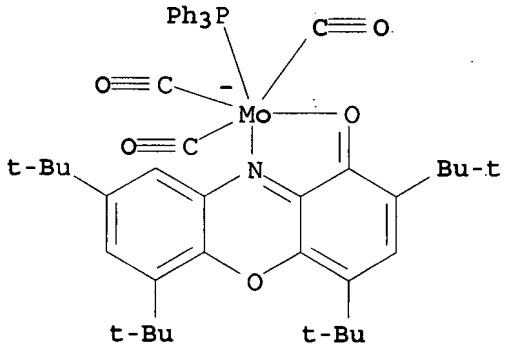
RN 112813-05-5 HCAPLUS
CN Molybdate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



IT **112813-04-4P 112813-06-6P 112813-08-8P**
(formation and ESR of)
RN 112813-04-4 HCAPLUS
CN Chromate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](triphenylphosphine)-, potassium (9CI) (CA INDEX NAME)

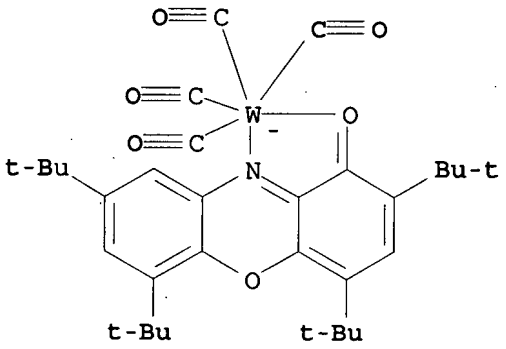


RN 112813-06-6 HCAPLUS
CN Molybdate(1-), tricarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1](triphenylphosphine)-, potassium (9CI) (CA INDEX NAME)



● K+

RN 112813-08-8 HCAPLUS
CN Tungstate(1-), tetracarbonyl[2,4,6,8-tetrakis(1,1-dimethylethyl)-1H-phenoxazin-1-one-N10,O1]-, potassium, (OC-6-33)- (9CI) (CA INDEX NAME)



● K+

CC 78-7 (Inorganic Chemicals and Reactions)
IT **112813-03-3P 112813-05-5P**
(formation and ESR and reaction of, with triphenylphosphine oxide)
IT 7439-98-7DP, complexes with oxotetrakis(tert-butyl)phenoxazyl
7440-33-7DP, complexes with oxotetrakis(tert-butyl)phenoxazyl
7440-47-3DP, complexes with oxotetrakis(tert-butyl)phenoxazyl
55429-04-4DP, Group VIB metal complexes **112813-04-4P**
112813-06-6P 112813-07-7P **112813-08-8P**
(formation and ESR of)

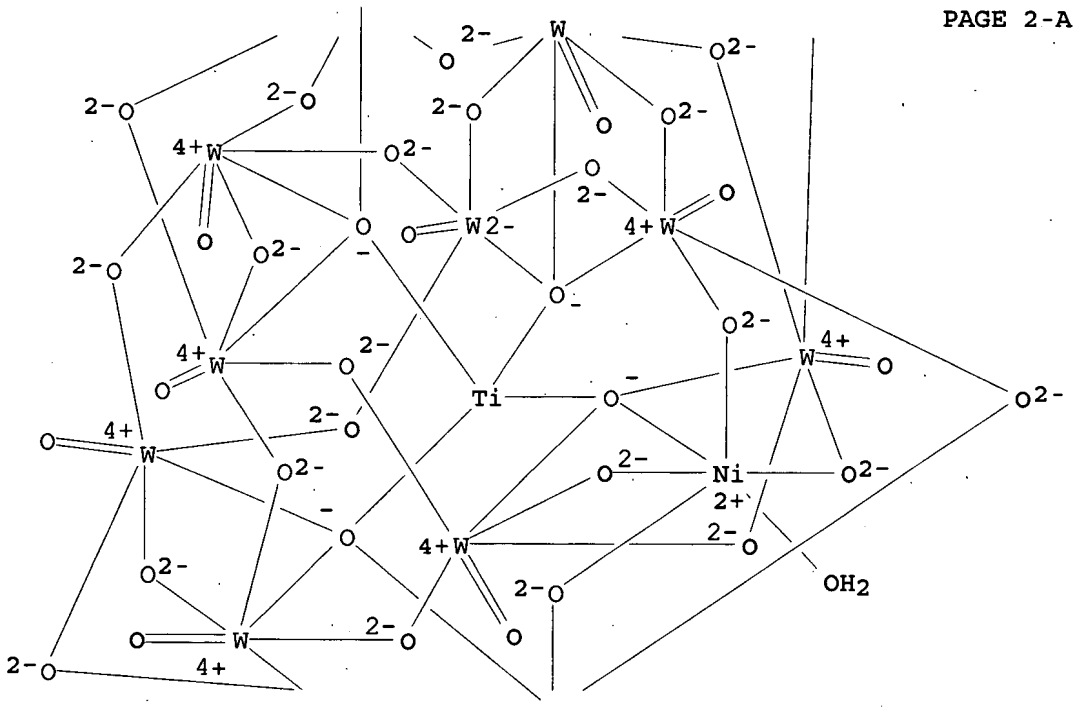
L27 ANSWER 28 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1986:582712 HCAPLUS
DOCUMENT NUMBER: 105:182712
TITLE: Heteropolytungstates with titanium(IV) and nickel(II). VI. The behavior of the nickel(II)

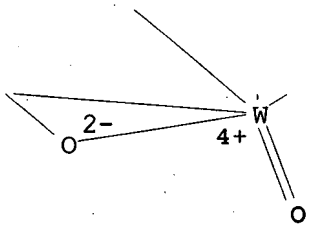
undecatungstotitanate(IV) and nickel(II) pentatungstotitanate(IV) anions towards **cationites**, in acidic and neutral media

AUTHOR(S): Vatulescu, Rodica; Budiu, T.; Marcu, G.; Pal, Irina
CORPORATE SOURCE: Inst. Chem., Cluj-Napoca, 3400, Rom.
SOURCE: Revue Roumaine de Chimie (**1986**), 31(2), 199-207
CODEN: RRCHAX; ISSN: 0035-3930
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 15 Nov 1986
AB Ion exchange of K6[H2ONiTiW11O39], (NH4)6[H2ONiTiW11O39] and Na4[H2ONiTiW5O20] with Amberlite IR-120 (K+, NH4+ and H+ forms) and Zerolite 225 (Na+ and H+ forms) were studied by chemical anal. and UV spectrophotometry. The data indicate that the 2 heteroatoms (Ti and Ni) are an integral part of the heteropolytungstate but they are not structurally equivalent
IT **79503-59-6**
(reactions of, with **cation** exchangers, structure in relation to)
RN 79503-59-6 HCAPLUS
CN Titanate(6-), (aquanickelate)(eicosa-μ-oxoundecaoxoundecatungstate)tetra-μ-oxotetra-μ4-oxo-, hexapotassium (9CI) (CA INDEX NAME)

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

PAGE 2-A





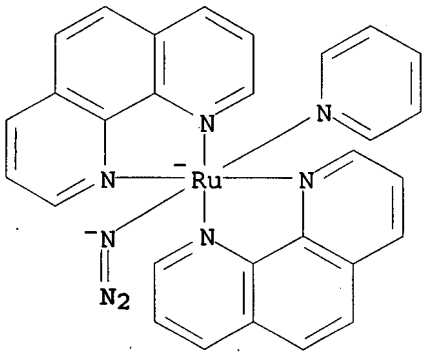
PAGE 3-A

●6 K+

CC 78-7 (Inorganic Chemicals and Reactions)
ST tungstonickelotitanate structure **cation** exchange; nickelotitanotungstate structure **cation** exchange; titanate tungstonickelo structure **cation** exchange
IT **Cation** exchange
(of tungstonickelotitanates)
IT Hydrolysis
(acid, of tungstonickelotitanates in presence of **cation** exchangers)
IT 104848-45-5P
(formation of, in reactions of pentatungstonickelotitanate with **cation** exchangers)
IT 104737-96-4P
(formation of, in reactions of undecatungstonickelotitanate with **cation** exchangers)
IT **79503-59-6** 80533-93-3 81543-72-8
(reactions of, with **cation** exchangers, structure in relation to)

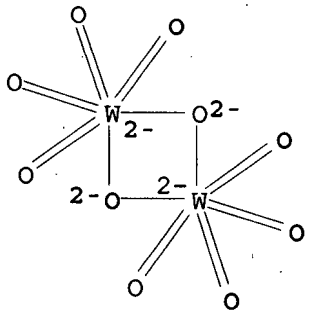
L27 ANSWER 29 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:494812 HCAPLUS
DOCUMENT NUMBER: 103:94812
TITLE: Redox properties of bis(1,10-phenanthroline)(pyridine)ruthenium(II) complexes
AUTHOR(S): Lawrance, Geoffrey A.
CORPORATE SOURCE: Dep. Chem., Univ. Newcastle, Newcastle, 2308, Australia
SOURCE: Polyhedron (**1985**), 4(5), 817-20
CODEN: PLYHDE; ISSN: 0277-5387
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 22 Sep 1985
AB The redox properties of a series [Ru(phen)2(py)X]n+ **cations** (phen = 1,10-phenanthroline; X = py, NH3, Cl, Br, I, CN, SCN, N3 and NO2) were investigated in MeCN. Two reversible reduction steps are seen at -1.35 and -1.6 V vs. Ag/AgCl; the invariance of these processes with the X-group is indicative of electron addition to mol. orbitals mainly of phenanthroline ligand π* origin. Irreversible multi-electron redns. follow below -2.20 V. The Ru(II)/Ru(III) couple is seen as a reversible wave near +0.8 V vs. a normal H electrode, from calibration with ferrocene, except in the cases of the NO2 and SCN complexes, where rapid reactions involving these ligands occur.
IT **97698-36-7**
(electrochem. redox reactions of system containing, in acetonitrile, electronic spectrum in relation to)

RN 97698-36-7 HCAPLUS
CN Ruthenate(2-), azidobis(1,10-phenanthroline-N1,N10)(pyridine)- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 73, 78
IT 97698-20-9 97698-21-0 97698-22-1 97698-23-2 97698-24-3
97698-25-4 97698-26-5 97698-27-6 97698-28-7 97698-29-8
97698-30-1 97698-31-2 97698-32-3 97698-33-4 97698-34-5
97698-35-6 **97698-36-7** 97698-37-8
(electrochem. redox reactions of system containing, in acetonitrile, electronic spectrum in relation to)

L27 ANSWER 30 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1985:480827 HCAPLUS
DOCUMENT NUMBER: 103:80827
TITLE: Quaternary oxotungstates(VI). Sodium lithium ditungstate (Na6Li2[W2O10] - a ditungstate
AUTHOR(S): Betz, T.; Hoppe, R.
CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ., Giessen, D-6300, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (**1985**), 522, 11-22
CODEN: ZAACAB; ISSN: 0044-2313
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 07 Sep 1985
AB Na6Li2[W2O10] was prepared by annealing mixts. of WO3, Na2O, and Li2O with W:Na:Li = 1:3.1. The crystals are triclinic, space group P.hivin.1, with a 784.66(11), b 602.53(7), c 563.81(11) pm, α 106.784(14), β 114.548(14), γ 91.082(13)°, Z = 2, d.(x-ray) = 4.92, d.(exptl.) = 4.85 g cm-3, and R = 8.32%. The structure may be described as a distorted derivative of the NaCl-type. The Madelung part of lattice energy, effective **coordination** nos., via mean fictive ionic radii, are calculated and discussed.
IT **97642-55-2P**
(preparation, crystal structure, Madelung part of lattice energy and effective **coordination** nos. of)
RN 97642-55-2 HCAPLUS
CN Tungstate (W2O10 8-), dilithium hexasodium (9CI) (CA INDEX NAME)

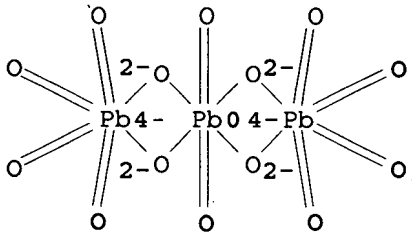


●2 Li+

●6 Na+

CC 78-6 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **97642-55-2P**
(preparation, crystal structure, Madelung part of lattice energy and effective **coordination** nos. of)

L27 ANSWER 31 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1983:415373 HCAPLUS
DOCUMENT NUMBER: 99:15373
TITLE: The first oligooxoplumbate(IV). Potassium lithium oxoplumbate ($K_2Li_{14}[Pb_3O_{14}]$)
AUTHOR(S): Brazel, B.; Hoppe, R.
CORPORATE SOURCE: Inst. Anorg. Anal. Chem., Justus-Liebig-Univ., Giessen, D-6300, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (**1982**), 493, 93-103
CODEN: ZAACAB; ISSN: 0044-2313
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 12 May 1984
AB $K_2Li_{14}[Pb_3O_{14}]$ was prepared by heating a 1:1.5:7 K_2PbO_3-PbO_3-Li_2O mixture at 560° for 20 d to obtain a powder or 580-595° for 90-200 d to obtain single crystals in a sealed Ag cylinder. $K_2Li_{14}[Pb_3O_{14}]$ is orthorhombic, space group Immm, with a 12.7990(9), b 7.9446(4), c 7.2620(4) Å, Z = 2, d.(x-ray) = 4.59, d.(exptl.) = 4.63, R = 6.67%. The structure is characterized by a triple-octahedron group $[Pb_3O_{14}]$. The Madelung part of the lattice energy, the effective **coordination** nos., and the effective ionic radii were calculated
IT **86050-78-4P**
(preparation, crystal structure and crystal lattice energy of)
RN 86050-78-4 HCAPLUS
CN Plumbate ($Pb_3O_{14}^{16-}$), tetradecalithium dipotassium (9CI) (CA INDEX NAME)

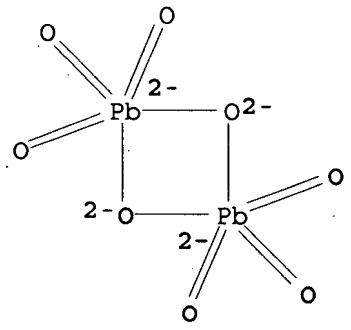


●2 K^+

●14 Li^+

CC 78-2 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **86050-78-4P**
(preparation, crystal structure and crystal lattice energy of)

L27 ANSWER 32 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1983:226817 HCAPLUS
DOCUMENT NUMBER: 98:226817
TITLE: "Fragmentation" and "aggregation" in lead oxides. Oligooxoplumbate(IV) $K_2Li_6[Pb_2O_8]$
AUTHOR(S): Brazel, B.; Hoppe, R.
CORPORATE SOURCE: Inst. Anorg. Annal. Chem., Justus-Liebig-Univ., Giessen, D-6300, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Anorganische und Allgemeine Chemie (**1983**), 497, 176-84
CODEN: ZAACAB; ISSN: 0044-2313
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 12 May 1984
AB $K_2Li_6[Pb_2O_8]$ was prepared by heating a K_2PbO_3-Li_2O-PbO_2 mixture (K:Li:Pb = 1:3:1) in a Ag bomb under vacuum at 660° for 120 d. $K_2Li_6[Pb_2O_8]$ is triclinic, space group P.hivin.1, with a 6.9720(9), b 5.9252(6), c 5.9312(7) Å, α 88.05(1), β 107.94(1), γ 107.30(1)°; Z = 1, d.(x-ray) = 4.95, d.(exptl.) = 4.91 g cm-3, R = 5.07%, Rw = 4.59%. The $K_2Li_2[Pb_2O_8]$ structure consists of a $[Pb_2O_8]$ unit in which each Pb atom is surrounded by five O atoms in a distorted trigonal bipyramidal environment. The Madelung part of the lattice energy and the effective **coordination** nos. are calculated
IT **86005-95-0P**
(preparation, crystal structure, Madelung constant and effective **coordination** nos. of)
RN 86005-95-0 HCAPLUS
CN Plumbate ($Pb_2O_8^{8-}$), hexalithium dipotassium, stereoisomer (9CI) (CA INDEX NAME)

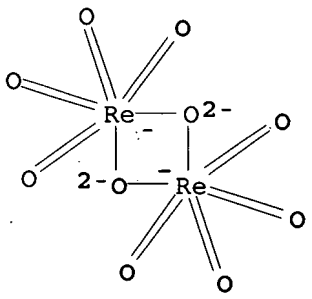


●2 K+

●6 Li+

CC 78-2 (Inorganic Chemicals and Reactions)
Section cross-reference(s): 75
IT **86005-95-0P**
(preparation, crystal structure, Madelung constant and effective **coordination** nos. of)

L27 ANSWER 33 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1977:23835 HCAPLUS
DOCUMENT NUMBER: 86:23835
TITLE: Analysis of the vibrational spectra of complexes with a double oxygen bridge
AUTHOR(S): Nikol'skii, A. B.; Bedrina, M. E.; D'yachenko, Yu. I.
CORPORATE SOURCE: USSR
SOURCE: Vestnik Leningradskogo Universiteta, Seriya 4: Fizika, Khimiya (**1976**), (3), 92-7
CODEN: VLUFBI; ISSN: 0024-0826
DOCUMENT TYPE: Journal
LANGUAGE: Russian
ED Entered STN: 12 May 1984
AB The normal vibrations of binuclear complexes of known structure of D2h symmetry were calculated to study the characteristic frequency of vibrations of the double O-bridged bond. The characteristic frequency region of the stretching vibration of this bond was assigned to 500-700 cm-1. The possibility of the identification of the bridge structure by using the vibrational spectra, on the basis of the calcn. for models with different structures, but of close stoichiometry is discussed. The presence of a double O-bridged bond was identified in the mol. of the complex [Ru2O6py4], of yet unknown structure, on the basis of the interpretation of the IR spectrum.
IT **22724-10-3**
(IR spectrum of)
RN 22724-10-3 HCAPLUS
CN Rhenate (Re2O106-), hexasodium (9CI) (CA INDEX NAME)

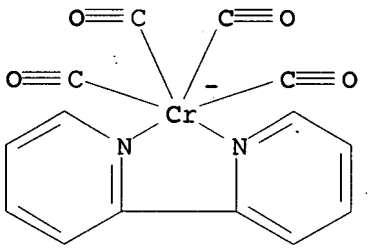


●6 Na^+

CC 73-3 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)
IT Infrared spectra
(of **coordination** complexes with double oxygen bridges)
IT **Coordination** compounds
(vibrational spectra of, with double oxygen bridges)
IT 22443-17-0 22724-09-0 **22724-10-3** 27816-73-5 38976-95-3 61374-80-9
(IR spectrum of)

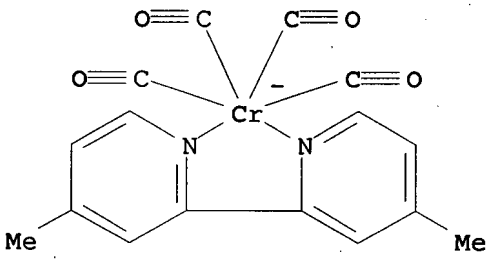
L27 ANSWER 34 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1972:106055 HCAPLUS
DOCUMENT NUMBER: 76:106055
TITLE: Complexes with 2,2'-bipyridine negative ion. II. Sodium 2,2'-bipyridinetetracarbonylchromium, -molybdenum, and -tungsten
AUTHOR(S): Kaizu, Youkoh; Kobayashi, Hiroshi
CORPORATE SOURCE: Dep. Chem., Tokyo Inst. Technol., Tokyo, Japan
SOURCE: Bulletin of the Chemical Society of Japan (**1972**), 45(2), 470-7
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
AB Bipyridinetetracarbonylchro-mium, -molybdenum, and -tungsten and their related complexes were reduced with Na in THF. Some products in the 1st stage of reduction were isolated. On the basis of the electronic absorption spectrum and the ESR, the complex formed in the reduction was concluded to be a complex **coordinated** by the mononeg. ion of bipyridine. Metal dσ orbital in the complex is still higher than the bipyridine π* orbital, even if it is fairly lowered by a pos. charge arising from the metal-to-carbonyl back donation. Trapped electrons in the bipyyridine π* orbital are, however, readily transferred into the dσ orbital depending on the mol. environment. This gives rise to the formation of a pentacoordinate complex or complex dimer by evolving CO.
IT **28987-28-2 28987-29-3 29132-20-5 36581-41-6 36581-42-7 36581-43-8 36632-04-9 36632-05-0 36632-06-1 36632-07-2 36632-08-3 36632-09-4**
(ESR and electronic spectrum of, structure in relation to)
RN 28987-28-2 HCAPLUS
CN Chromate(1-), (2,2'-bipyridine-N,N')tetracarbonyl-, sodium, (OC-6-22)-

(9CI) (CA INDEX NAME)



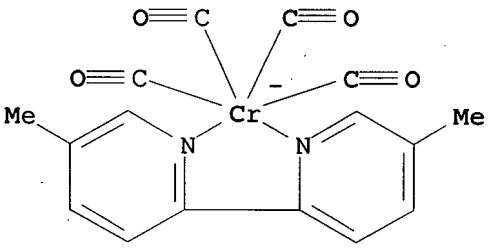
● Na^+

RN 28987-29-3 HCAPLUS
CN Chromate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

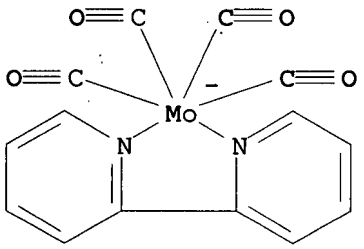
RN 29132-20-5 HCAPLUS
CN Chromate(1-), tetracarbonyl(3,3'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

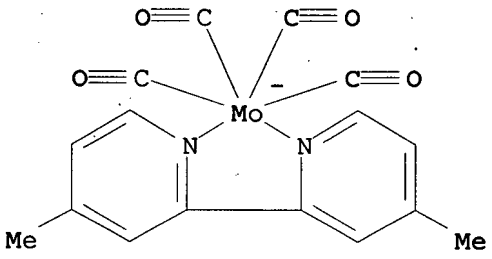
RN 36581-41-6 HCAPLUS
CN Molybdate(1-), (2,2'-bipyridine-κN1,κN1')tetracarbonyl-,

sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



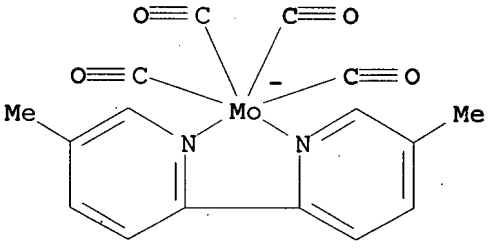
● Na^+

RN 36581-42-7 HCAPLUS
CN Molybdate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

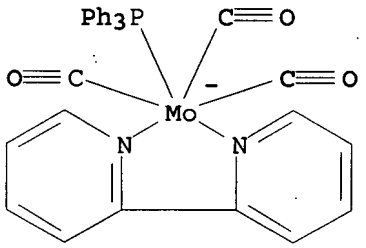
RN 36581-43-8 HCAPLUS
CN Molybdate(1-), tetracarbonyl(5,5'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

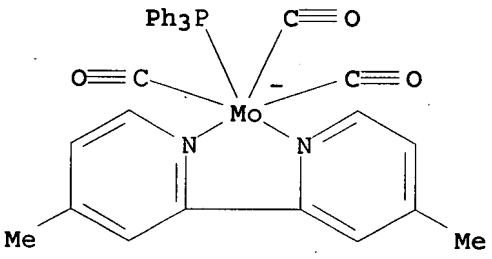
RN 36632-04-9 HCAPLUS
CN Molybdate(1-), (2,2'-bipyridine-N,N')tricarbonyl(triphenylphosphine)-,

sodium (9CI) (CA INDEX NAME)



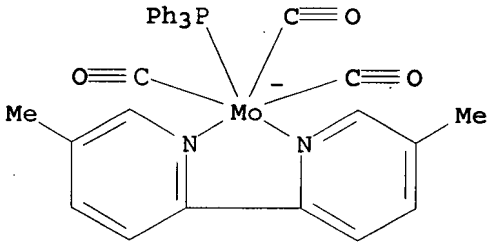
● Na^+

RN 36632-05-0 HCAPLUS
CN Molybdate(1-), tricarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')(triphenylphosphine)-, sodium (9CI) (CA INDEX NAME)



● Na^+

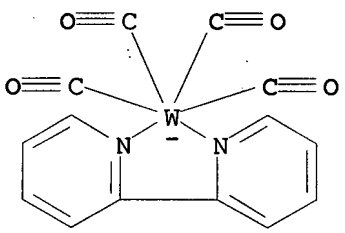
RN 36632-06-1 HCAPLUS
CN Molybdate(1-), tricarbonyl(5,5'-dimethyl-2,2'-bipyridine-N,N')(triphenylphosphine)-, sodium (9CI) (CA INDEX NAME)



● Na^+

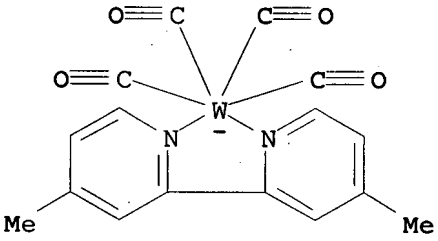
RN 36632-07-2 HCAPLUS
CN Tungstate(1-), (2,2'-bipyridine-N,N')tetracarbonyl-, sodium,

(OC-6-22)- (9CI) (CA INDEX NAME)



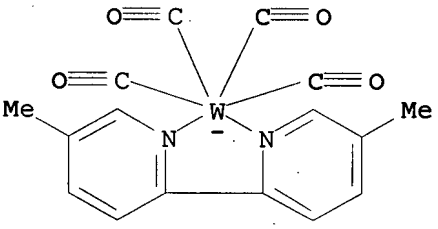
● Na+

RN 36632-08-3 HCAPLUS
CN Tungstate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na+

RN 36632-09-4 HCAPLUS
CN Tungstate(1-), tetracarbonyl(5,5'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)

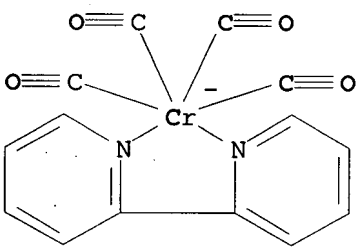


● Na+

CC 73 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)

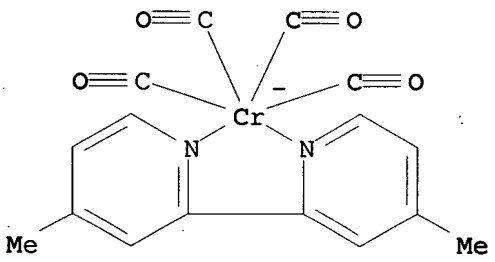
Section cross-reference(s): 78
IT **28987-28-2 28987-29-3 29132-20-5**
36581-41-6 36581-42-7 36581-43-8
36632-04-9 36632-05-0 36632-06-1
36632-07-2 36632-08-3 36632-09-4
(ESR and electronic spectrum of, structure in relation to)

L27 ANSWER 35 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1970:505018 HCAPLUS
DOCUMENT NUMBER: 73:105018
TITLE: Complexes **coordinated** by the 2,2'-bipyridine negative ion. I. Synthesis of sodium 2,2'-bipyridinetetracarbonylchromium
AUTHOR(S): Kaizu, Youkoh; Kobayashi, Hiroshi
CORPORATE SOURCE: Dep. Chem., Tokyo Inst. Technol., Tokyo, Japan
SOURCE: Bulletin of the Chemical Society of Japan (**1970**), 43(8), 2492-4
CODEN: BCSJA8; ISSN: 0009-2673
DOCUMENT TYPE: Journal
LANGUAGE: English
ED Entered STN: 12 May 1984
AB Bipyridinetetracarbonylchromium was reduced by Na metal in THF. The 1st stage product of the reduction, which showed a spectrum similar to that of Na bipyridine (Na+bipy-), was isolated. The complex was Na[Cr(CO)4bipy]. The electronic absorption spectrum and the ESR indicate the complex formed in the reduction was **coordinated** by the mononeg. ion of bipyridine and should be named sodium 2,2'-bipyridine(1-)tetracarbonylchromium(0).
IT **28987-28-2P 28987-29-3P 29132-20-5P**
(preparation of)
RN 28987-28-2 HCAPLUS
CN Chromate(1-), (2,2'-bipyridine-N,N')tetracarbonyl-, sodium, (OC-6-22)-(9CI) (CA INDEX NAME)



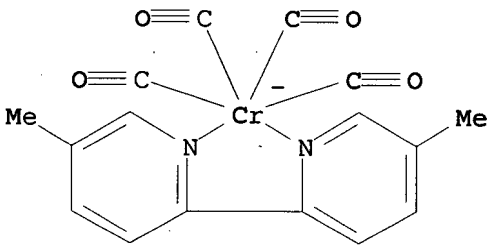
● Na^+

RN 28987-29-3 HCAPLUS
CN Chromate(1-), tetracarbonyl(4,4'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

RN 29132-20-5 HCAPLUS
CN Chromate(1-), tetracarbonyl(3,3'-dimethyl-2,2'-bipyridine-N,N')-, sodium, (OC-6-22)- (9CI) (CA INDEX NAME)



● Na^+

CC 78 (Inorganic Chemicals and Reactions)
IT 366-18-7DP, 2,2'-Bipyridine, chromium complexes 1134-35-6DP, 2,2'-Bi-4-picoline, chromium complexes 1762-34-1DP, 6,6'-Bi-3-picoline, chromium complexes **28987-28-2P** **28987-29-3P** **29132-20-5P**
(preparation of)

L27 ANSWER 36 OF 36 HCAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 1970:85752 HCAPLUS
DOCUMENT NUMBER: 72:85752
TITLE: A 2,2'-bipyridyl-substituted decacarbonyldimolybdate(-I)-anion with a metal-metal bond
AUTHOR(S): Lehnert, Guenter; Behrens, Helmut; Lindner, Ekkehard
CORPORATE SOURCE: Inst. Anorg. Chem., Univ. Erlangen-Nuernberg, Erlangen, Fed. Rep. Ger.
SOURCE: Zeitschrift fuer Naturforschung, Teil B: Anorganische Chemie, Organische Chemie, Biochemie, Biophysik, Biologie (**1970**), 25(1), 106-7
CODEN: ZENBAX; ISSN: 0044-3174
DOCUMENT TYPE: Journal
LANGUAGE: German
ED Entered STN: 12 May 1984

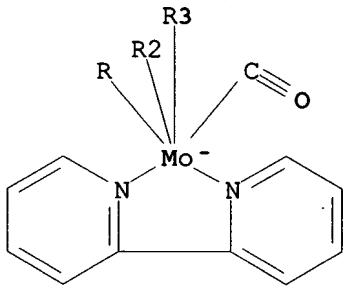
AB Reduction of (bipy)(CO)2Mo(CO)2Mo-(CO)2(bipy) (where bipy = 2,2'-dipyridyl) with Na in tetrahydrofuran in the presence of **catalytic** amts. of bipy gave Na2-[(bipy)(CO)3MoMo(CO)3(bipy)] (I). The degree of oxidation of Mo in I was determined by reaction with aqueous HCl in tetrahydrofuran and IR spectroscopy. I is soluble in tetrahydrofuran, Me3CO, and MeCN and showed electrolytic properties in them. Because of the instability of I as a solid and in solution even at -40°, elec. conductivity measurements were not reproducible. Comparisons with [Mo2(CO)10]2- indicate a C3v-pseudo symmetry for I.

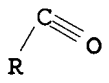
IT **25685-68-1P**
(preparation of)

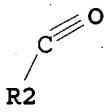
RN 25685-68-1 HCAPLUS

CN Molybdate(2-), bis(2,2'-bipyridine)hexacarbonyldi-, disodium (8CI) (CA INDEX NAME)

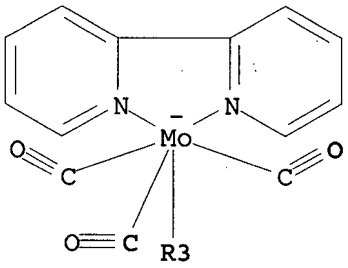
PAGE 1-A







PAGE 2-A



●2 Na^+

CC 78 (Inorganic Chemicals and Reactions)
IT **25685-68-1P**
(preparation of)

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L2              SCR 2043 OR 2017 OR 2021 OR 2026
L3              STR
L4         552687 SEA SSS FUL L3 AND  L1 NOT L2
               ---------
L5              STR
L6             50 SEA SUB=L4 SSS SAM L5
L7              STR L3
L8              STR L7
L9              STR L8
L10             STR
L11             0 SEA SUB=L4 SSS SAM L10
L12             STR L3
L13             8 SEA SUB=L4 SSS SAM L12
L14         26623 SEA SUB=L4 SSS FUL L5
L15            50 SEA SUB=L14 SSS SAM (L7 OR L8 OR L9)
L16         26623 SEA SUB=L14 SSS FUL (L7 OR L8 OR L9)
L17            10 SEA SUB=L16 SSS SAM L12
L18           263 SEA SUB=L16 SSS FUL L12

     FILE 'HCAPLUS' ENTERED AT 10:14:39 ON 05 OCT 2007
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L20            95 SEA ABB=ON  PLU=ON  L19 AND (1840-2002)/PRY,AY,PY
L21             0 SEA ABB=ON  PLU=ON  L20 AND CAT/RL
L22             1 SEA ABB=ON  PLU=ON  L19 AND CAT/RL
L23             0 SEA ABB=ON  PLU=ON  L20 AND PHARM?/SC,SX
                  D L20 85 HITSTR
L24            12 SEA ABB=ON  PLU=ON  L20 AND CAT?
L25             2 SEA ABB=ON  PLU=ON  L20 AND POLYMER?
L26            24 SEA ABB=ON  PLU=ON  L20 AND COORDINAT?
L27            36 SEA ABB=ON  PLU=ON  (L21 OR L22 OR L23 OR L24 OR L25 OR
                  L26)
L28         27914 SEA ABB=ON  PLU=ON  L14
L29          2499 SEA ABB=ON  PLU=ON  L28(L)CAT/RL
L30           388 SEA ABB=ON  PLU=ON  L29 AND POLYMERI?
L31           336 SEA ABB=ON  PLU=ON  L29(L)PREP/RL
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L33            29 SEA ABB=ON  PLU=ON  L32 NOT L27
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